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BBA-V Sem.

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BBA Examination, Dec.-2023

Question Booklet Number

Arithmatic Aptitude

Code : BBA-501

Question Booklet Series

Q

(To be filled in by the Candidate / निम्न पूर्तियाँ परीक्षार्थी स्वयं भरें)

Roll No. (in figures) _____
अनुक्रमांक (अंकों में)

Roll No. (in words) _____
अनुक्रमांक (शब्दों में)

Enrolment No. (in figures) _____

Name of College _____
कॉलेज का नाम

| Maximum Marks : 75
अधिकतम अंक : 75

| Time : 2 Hours
| समय : 2 घण्टे

_____
Signature of Invigilator
कक्ष निरीक्षक के हस्ताक्षर

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer all 100 questions in the OMR Answer-Sheet provided and **not in the question booklet**. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

(Remaining Instructions on last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोले जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को सभी 100 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, **प्रश्न-पुस्तिका पर नहीं**। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गये हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, उसे तुरन्त बदल लें।

(शेष निर्देश अन्तिम पृष्ठ पर)

1. Which of the following is greater ratio?

3:4 and 4:5

(A) 3:4

(B) 4:5

(C) Both (A) & (B)

(D) None of the above

2. The inverse of matrix exists when:

(A) $|A|=0$

(B) $|A|\neq 0$

(C) $|A|=1$

(D) $|A|\neq 1$

3. Find the value of ${}^{5}C_{4}+{}^{2}C_{1}$

(A) 10

(B) 9

(C) 8

(D) 7

4. For matrix addition _____ is true:

(A) Commutative Law

(B) Associative Law

(C) Cancellation Law

(D) All of the above

5. If x : 7 : : 5:4, find the value of x:

(A) 5.75

(B) 6.25

(C) 7.50

(D) 8.75

6. In an examination, 50 candidates were passed and 10 candidates were failed. Find the ratio of passed and failed candidates:

(A) 5:1

(B) 1:5

(C) 4:5

(D) 5:4

7. What sum will amount of Rs. 33, 075 in two years at 5% per annum compound interest.

(A) 10,000 ₹

(B) 20,000 ₹

(C) 30,000 ₹

(D) 40,000 ₹

8. What will be the simple interest on Rs. 8,000 for 6 years at an annual rate of 5%?

(A) ₹ 600

(B) ₹ 1800

(C) ₹ 2400

(D) None of these

9. Find the value of $^{11}p_4$.

(A) 7,920

(B) 7,420

(C) 9,920

(D) 9,420

10. In how many ways can the ward "BANKER" be rearranged?

(A) 120

(B) 420

(C) 720

(D) 1020

11. Formula for calculating Compound Amount when interest is compounded annually:

(A) $\text{Amount} = P\left[1 + \frac{t}{100}\right]^t$

(B) $\text{Amount} = P\left[1 + \frac{r}{100}\right]^t$

(C) $\text{Amount} = R\left[1 + \frac{P}{100}\right]^t$

(D) $\text{Amount} = R\left[1 + \frac{t}{100}\right]^P$

12. The ratio between the number of boys and girls in a class is 1:3. If number of boys is 11, then the total number of students in class is:

(A) 22

(B) 44

(C) 66

(D) 88

13. In how many ways 8 persons can sit around the circular table?

(A) 5040

(B) 5060

(C) 5080

(D) None of these

14. If 36 men can do a certain piece of work in 25 days, then in how many days will 15 men do it?

(A) 40 days

(B) 60 days

(C) 70 days

(D) 80 days

15. Value of $^{10}C_3$ is equals to:

(A) 120

(B) 80

(C) 160

(D) 40

16. Aman took a loan of ₹18,000 for 5 years at a simple interest. If the total interest paid is Rs. 3600, what is the rate of interest per annum?

(A) 2%

(B) 4%

(C) 5%

(D) 9%

17. How many words can be made by 25 consonants and 5 vowels where it has 2 consonants and 3 vowels.

(A) 1,20,000

(B) 2,40,000

(C) 3,60,000

(D) 4,80,000

18. The tabular form of the set:

$P=\{x:x\in N, x<6\}$, will be:

(A) $P=\{1,2,3,4,5,6\}$

(B) $P=\{0,1,2,3,4,5,6\}$

(C) $P=\{1,2,3,4,5\}$

(D) None of these

19. $\text{Log}_{10}10=?$

(A) 0

(B) 1

(C) ∞

(D) None of these

20. If $A=\{1,2,3,4,5\}$, $B=\{4,5,6,7,8\}$, $C=\{7,8,9,10\}$, $D=\{10,11,12,13,14\}$, then $A\cup B$?

(A) $\{1,2,3,4,5,6,7,8\}$

(B) $\{1,2,3,4,5,4,5,6,7,8\}$

(C) $\{4,5\}$

(D) None of these

log (1+2+3)=?

(A) log1+log2+log3

(B) log1×log2×log3

(C) log(1×2×3)

(D) None of these

22. If A={1,2,3,4,5}, B={2,4,6,8} and C={3,5,7}, then:

A∪(B∪C)=?

(A) {1,2,3,4,5,6,7,8}

(B) {1,2,3,5,7}

(C) {2,4,6,8}

(D) None of these

23. A man bought a watch for Rs.80 and sells for Rs. 120 then, the profit percentage will be:

(A) 25%

(B) 50%

(C) 75%

(D) 100%

24. A person bought a cycle for Rs. 360. For what price should he sell it to gain 15%?

(A) 404

(B) 414

(C) 424

(D) 434

25. Find the true discount and the present worth of ₹275 due in two years hence simple interest at 5% per annum.

(A) True discount=20, Present worth=255

(B) True discount=15, Present worth=290

(C) True discount=25, Present worth=250

(D) None of these

26. Three partners A, B, C invest Rs. 34,000, Rs. 26,000 and Rs. 10,000 respectively in a business. Out of the total profit of Rs. 17,500 A'S share (in rupees) is:

(A) 8750

(B) 8500

(C) 7500

(D) 3750

27. The ratio of the ages of father and son at present is 6:1. After 5 years, the ratio will become 7:2. The present age of the son is:

(A) 5 years

(B) 6 years

(C) 9 years

(D) 10 years

28. In 10 years, A will be twice as old as B was 10 years ago. If A is now 9 years older than B, the present age of B is:

(A) 19 years

(B) 29 years

(C) 39 years

(D) 49 years

29. The least prime number is:

(A) 0

(B) 1

(C) 2

(D) 3

30. Zero is:

(A) A natural number

(B) A whole number

(C) A positive integer

(D) A negative integer

31. Today is Monday After 61 days it will be:

(A) Wednesday

(B) Saturday

(C) Tuesday

(D) Thursday

32. January 1, 2023 was Sunday. Then January 1,2024 falls on the day:

(A) Monday

(B) Saturday

(C) Sunday

(D) None of these

33. What will be angle between the two hands of a clock at 9:50?

(A) 10°

(B) 5°

(C) 15°

(D) 20°

34. At what time between 1 O'clock and 2 O'clock, will the hands of a clock be together?

(A) $5\frac{5}{11}$ min. past 1

(B) $5\frac{11}{5}$ min. past 2

(C) $6\frac{5}{11}$ min. past 1

(D) $6\frac{11}{5}$ min. past 2

35. 24 men can complete a given job in 40 days. The number of men required to complete the job in 32 days, is:

(A) 30

(B) 32

(C) 34

(D) 36

36. A can do a piece of work in 24 days. If B is 60% more efficient than A, then the number of days required by B to do the same piece of work is:

(A) 12

(B) 15

(C) 17

(D) 18

37. A man walks at the rate of 5km/hr for 6 hours and at 4 km/hr for 12 hours. The average speed of the man (in km/hr) is:

(A) 4

(B) $4\frac{1}{3}$

(C) $4\frac{1}{2}$

(D) $4\frac{2}{3}$

38. A man cycles at the rate of 15.6 kmph. How many meters does he cover in 2 minutes?

(A) 31.2

(B) 260

(C) 520

(D) 5200

39. One side of a rectangular field is 4 meters and its diagonal is 4 meters. The area of the field is:

(A) $12m^2$

(B) $15m^2$

(C) $20m^2$

(D) None of these

40. If the side of a square is increased by 25%, then how much percent does its area get increased?

(A) 125

(B) 156.25

(C) 50

(D) 56.25

41. The true discount on a bill of Rs. 540 is Rs. 90. The banker's discount is:

(A) Rs. 108

(B) Rs. 150

(C) Rs. 180

(D) Rs. 110

42. The function $f(x)=x^2+4n+4$ is:

(A) odd

(B) even

(C) neither odd nor even

(D) periodic

43. Which of the following is irrational?

(A) $\sqrt{4/9}$

(B) 4/5

(C) $\sqrt{7}$

(D) $\sqrt{81}$

44. If $a^x=b$, then:

(A) $\log_b x=a$

(B) $\log_a x=b$

(C) $\log_a b=x$

(D) None of these

45. **Statement:-**Some actors are singers.

All the singers are dancers.

Conclusions:

(1) Some actors are dancers

(2) No singer is actor

(A) Only (1) conclusion follows

(B) Only (2) conclusion follows

(C) Either (1) or (2) follows

(D) Neither (1) nor (2) follows

46. **Statements:** All the harmoniums are instruments. All the instruments are flutes.

Conclusions:

(1) All the flutes are instruments

(2) All the harmoniums are flutes

(A) Only (1) conclusion follows

(B) Only (2) conclusion follows

(C) Either (1) or (2) follows

(D) Neither (1) nor (2) follows

47. The H.C.F. of two numbers is 23 and the other two factors of their LCM are 13 and 14. The larger of the two numbers is:

(A) 276

(B) 299

(C) 322

(D) 345

48. Three number are in the ratio of 3:4:5 and their LCM is 2400. Their H.C.F. is:

(A) 40

(B) 80

(C) 120

(D) 200

49. The greatest number of four digits which is divisible by 15, 25, 40, 75 is:

(A) 600

(B) 9000

(C) 9600

(D) 9400

50. A train running at the speed of 60km/hr crosses a pole in 9 seconds. What is the length of the train?

(A) 120 metres

(B) 180 metres

(C) 324 metres

(D) 150 metres

51. A train 240m long passes a pole in 24 seconds. How long will it take to pass a platform 650 m long?

(A) 65 seconds

(B) 89 seconds

(C) 100 seconds

(D) 150 seconds

52. Two trains are running in opposite directions with the same speed. If the length of each train is 120 metres and they cross each other in 12 seconds, then the speed of each train (in km/hr) is:

(A) 10

(B) 18

(C) 36

(D) 75

53. A boat can travel with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream.

(A) 2 hours

(B) 3 hours

(C) 4 hours

(D) 5 hours

54. A man's speed with the current is 15km/hour and the speed of the current is 2.5km/hour. The man's speed against the current is:

(A) 8.5 km/hour

(B) 9 km/hour

(C) 10 km/hour

(D) 12.5 km/hour

55. A boat running downstream covers a distance of 16 km in 2 hours while for covering the same distance upstream, it takes 4 hours. What is the speed of the boat in still water?

(A) 4 kmph

(B) 6 kmph

(C) 8 kmph

(D) None of these

56. What decimal of an hour is a second?

(A) 0.0025

(B) 0.0256

(C) 0.00027

(D) None of these

57. The value of

$$\frac{0.1\times0.1\times0.1 + 0.2\times0.2\times0.2}{0.2\times0.2\times0.2 + 0.04\times0.04\times0.04}$$ is:

(A) 0.0125

(B) 0.125

(C) 0.25

(D) 0.5

58. $\frac{0.009}{?} = 0.01$

(A) 0.0009

(B) 0.09

(C) 0.9

(D) 9

59. 3889+12.952-?=3854.002

(A) 47.095

(B) 47.752

(C) 47.932

(D) 47.95

60. A girl walks Northward then turns left, then right and then left after walking some distance each time. In which direction is she from the starting point?

(A) North-East

(B) North-West

(C) South-West

(D) South-East

61. A clock is so placed that at 12 noon its minute hand points towards North-East. In which direction does its hour hand point at 1:30 pm?

(A) North

(B) South

(C) East

(D) West

62. If South-East becomes North, North-East becomes west and soon, what will west become?

(A) South-East

(B) North

(C) East

(D) North-West

Directions (Q.No. 63-65):

Study the following information carefully and answer the questions given below:

M,D,P,K,R,T and W are sitting around a circle facing at the centre. D is second to the right of P who is third to the right of K. T is third to the right of W who is not an immediate neighbour of D. M is third to the left of R.

63. Who is second to the right of T?

(A) D

(B) K

(C) M

(D) None of these

64. In which of the following pairs is second person sitting to the immediate right of the first person?

(A) DT

(B) TP

(C) PR

(D) KW

65. Who is to the immediate left of R?

(A) W

(B) P

(C) K

(D) T

66. Radha, Sheela, Mahima and Seeta are sitting around a rectangular table. Radha is to the right of Sheela.Mahima is to the left of Seeta. Which of the persons given in the options are sitting opposite to each other?

(A) Sheela-Seeta

(B) Radha-Seeta

(C) Radha-Sheela

(D) Mahima-Radha

67. Directions: (Q. 67-68)

Following questions are based on the five three digit numbers given below:

519, 364, 287, 158, 835

If the positions of the first and the third digits within each number are interchanged, then which of the following will be the third digit of the second lowest number?

(A) 9

(B) 4

(C) 7

(D) 5

68. Which of the following is the difference between the second digit of the lowest and the highest of these numbers?

(A) 3

(B) 1

(C) 2

(D) 0

69. How many times are the hands of a clock is at the right angle in a day?

(A) 22

(B) 24

(C) 44

(D) 48

70. Find the number of row and column in the following matrix:

$$\begin{bmatrix} 8 \\ 9 \\ 10 \\ 11 \end{bmatrix}$$

(A) 4 rows 1 column

(B) 1 row 4 columns

(C) 2 row 2 columns

(D) None of these

71. Classify the following matrix:

$\begin{bmatrix} 5 \\ -1 \\ 2 \\ 3 \end{bmatrix}$

(A) Row Matrix

(B) Column Matrix

(C) Identify Matrix

(D) None of these

72. Classify the following Matrix:

$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

(A) Row Matrix

(B) Column Matrix

(C) Identify Matrix

(D) None of these

73. Directions : Q-(73-74)

If $A = \begin{bmatrix} 5 & 4 \\ 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 \\ 2 & 5 \end{bmatrix}$,

find:- [A+B]

(A) $\begin{bmatrix} 4 & 4 \\ 1 & -3 \end{bmatrix}$

(B) $\begin{bmatrix} 6 & 4 \\ 5 & 7 \end{bmatrix}$

(C) $\begin{bmatrix} 5 & 5 \\ 5 & 7 \end{bmatrix}$

(D) None of these

74. Find [A-B]:

(A) $\begin{bmatrix} 4 & 4 \\ 1 & -3 \end{bmatrix}$

(B) $\begin{bmatrix} 6 & 4 \\ 5 & 7 \end{bmatrix}$

(C) $\begin{bmatrix} 5 & 4 \\ 3 & 2 \end{bmatrix}$

(D) $\begin{bmatrix} 1 & 0 \\ 2 & 5 \end{bmatrix}$

75. If $A = \begin{bmatrix} 4 & 5 \\ 6 & 7 \end{bmatrix}$, find: 4A+2I

(A) $\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$

(B) $\begin{bmatrix} 4 & 5 \\ 6 & 7 \end{bmatrix}$

(C) $\begin{bmatrix} 18 & 20 \\ 24 & 30 \end{bmatrix}$

(D) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

76. If $A = \begin{bmatrix} 0 & 2 & 3 \\ 2 & 1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 5 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$, find the value of 2A+3B.

(A) $\begin{bmatrix} 10 & 12 & 6 \\ 2 & 8 & 10 \end{bmatrix}$

(B) $\begin{bmatrix} 0 & 4 & 6 \\ 4 & 2 & 8 \end{bmatrix}$

(C) $\begin{bmatrix} 15 & 18 & 9 \\ 3 & 12 & 15 \end{bmatrix}$

(D) $\begin{bmatrix} 15 & 22 & 15 \\ 7 & 14 & 23 \end{bmatrix}$

77. If $A = \begin{bmatrix} 1 & 2 \\ -2 & 1 \end{bmatrix}, B = \begin{bmatrix} 2 & 1 \\ 2 & 4 \end{bmatrix}$, find AB

(A) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$

(B) $\begin{bmatrix} 6 & 9 \\ -2 & 2 \end{bmatrix}$

(C) $\begin{bmatrix} 2 & 2 \\ -4 & 4 \end{bmatrix}$

(D) None of these

78. Is the following matrix comfortable for the product of AB?

$A = [1 \ -1 \ 2 \ 3], B = \begin{bmatrix} 0 \\ 1 \\ 2 \\ 3 \end{bmatrix}$

(A) Yes

(B) No

(C) May be

(D) None of these

79. Evaluate the following determinants:

$\begin{vmatrix} 3 & 1 \\ 5 & 6 \end{vmatrix}$

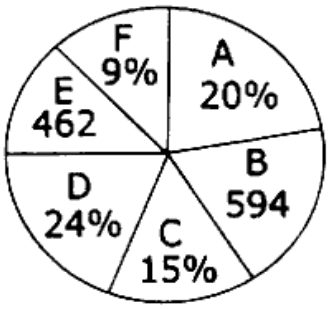
(A) 13

(B) 14

(C) 15

(D) None of these

80. **Directions:** Data given below shows number of girls in six different schools. Some data is given in absolute value while some in percentage. Study the data in pie-chart and answer the questions from 80 to 84.



Find the central angle of girls in school B.

(A) 57.6°

(B) 64.8°

(C) 72°

(D) 79.2°

81. Total number of girls in school 'D' is how much more than total number of girls in school 'E'?

(A) 264

(B) 297

(C) 330

(D) 363

82. Find the total number of girls in school 'A' and 'D' together?

(A) 1364

(B) 1386

(C) 1408

(D) 1452

83. If ratio between number of girls and number of boys in school 'F' is 9:8, then find total number of students in school 'F'.

(A) 561

(B) 550

(C) 528

(D) 539

84. Total number of girls in school 'C' is what percentage less than total number of girls in school 'A'

(A) 33.33%

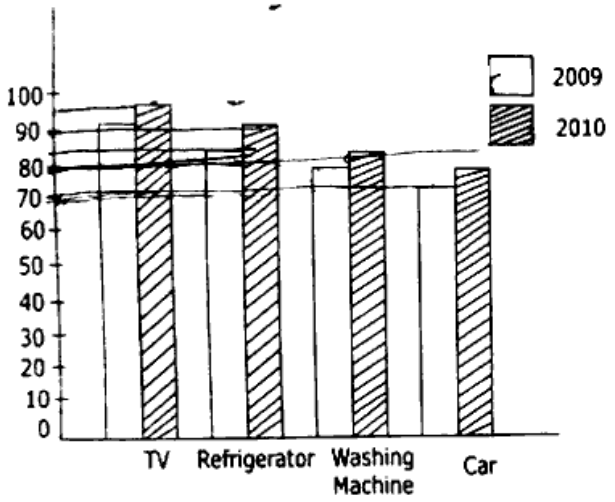
(B) 25%

(C) 75%

(D) 50%

85. Study the bar chart given below and answer the questions from 81 to 85.

Percentage of households using various appliances in 2 years:



By what percentage is the households that used T.V. more than the households that used refrigrator in 2010:

(A) 5%

(B) 5.55%

(C) 5.75%

(D) 6%

86. By what percentage do the car users rise in the two-years:

(A) 9.99%

(B) 3.33%

(C) 6.33%

(D) 6.67%

87. If the household population is 112 million in 2010, how many used washing machines?

(A) 96 million

(B) 95.2 million

(C) 95.8 million

(D) 96.2 million

88. If the household population is 128 million in 2010, how many more people used T.V. than a Car?

(A) 19.2 million

(B) 18.8 million

(C) 19 million

(D) 19.4 million

89. Which of the appliances has the lowest rate of increase from 2009 to 2010?

(A) TV

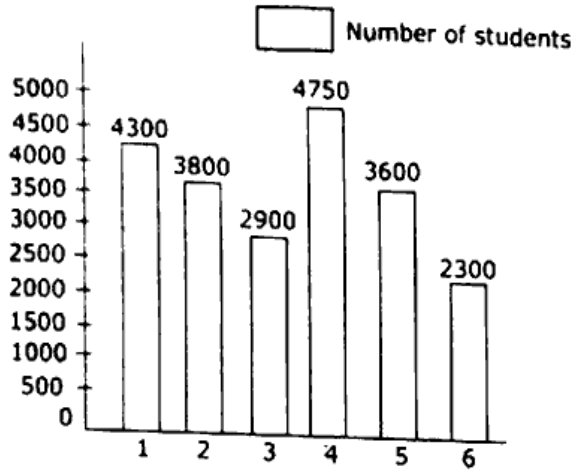
(B) Washing Machine

(C) Refrigerator

(D) Car

90. Study the following Bar Chart and the data table to answer the question from 86 to 90 given below them:

Number of students in 6 colleges



% of Boys and Girls in 6-Colleges

	Boys%	Girls%
1	54	46
2	58	42
3	64	36
4	72	28
5	49	51
6	51	49

How many more boys than girls are there in college 3?

(A) 822

(B) 802

(C) 792

(D) 812

91. What is the average number of girls in all the colleges?

(A) 1485

(B) 1487

(C) 1483

(D) 1492

92. Which college has the minimum number of boys?

(A) 2

(B) 3

(C) 5

(D) 6

93. What percentage of boys in college 4 are the boys in college 1?

(A) 68.7%

(B) 66.8%

(C) 67.8%

(D) 69%

94. If the number of boys in each college is reduced by half and the total number of students in all the colleges remain the same how many girls will be there in all the colleges together?

(A) 12850

(B) 15820

(C) 15280

(D) 18520

95. If $\begin{vmatrix} 4 & 6 \\ -2 & x \end{vmatrix} = 4$ then find the value of x.

(A) -2

(B) -4

(C) +2

(D) +4

96. Matrices $\begin{vmatrix} 5 & 3 \\ 10 & 6 \end{vmatrix}$ is

(A) Singular

(B) Non-Singular

(C) Both (A) & (B)

(D) None of the above

97. Value of $\begin{vmatrix} 3 & 0 \\ 4 & 1 \end{vmatrix} \begin{vmatrix} 2 & 5 \\ 1 & 4 \end{vmatrix}$ will be:

(A) 9

(B) 12

(C) 18

(D) 20

98. If $A = \begin{bmatrix} 4 & -3 & 6 \\ 3 & 1 & 4 \end{bmatrix}$, find A^t:

(A) $\begin{bmatrix} 4 & 3 \\ -3 & 1 \\ 6 & 4 \end{bmatrix}$

(B) $\begin{bmatrix} 4 & -3 & 6 \\ 3 & 1 & 4 \end{bmatrix}$

(C) $\begin{bmatrix} 3 & 4 \\ 1 & -3 \\ 4 & 6 \end{bmatrix}$

(D) $\begin{bmatrix} 4 & 6 & 1 \\ -3 & 3 & 4 \end{bmatrix}$

99. Co-factors of matrix $A = \begin{bmatrix} -2 & 3 \\ -5 & 4 \end{bmatrix}$ will be:

(A) $\begin{bmatrix} -4 & -5 \\ -3 & -2 \end{bmatrix}$

(B) $\begin{bmatrix} 4 & 5 \\ 3 & 2 \end{bmatrix}$

(C) $\begin{bmatrix} 4 & 5 \\ -3 & -2 \end{bmatrix}$

(D) $\begin{bmatrix} -4 & 5 \\ -3 & 2 \end{bmatrix}$

100. What should be added to each term of the number 10, 18, 22 and 38 to make the numbers in proportion?

(A) 2

(B) 4

(C) 6

(D) 8