

NIMCET o Previous year paper 2011

Included Subjects Mathematics Logical Reasoning Computer English

www.acmeacademy.in



NIMCET 2011

Mathematics:

1 . The value of sin 30° cos $(1)^{1-\sqrt{3}}$	$45^{\circ} + \cos 30^{\circ} \sin 45^{\circ}$	(A) 0 (C) $A^2 + B^2$	(B) $A^2 + 2AB + B^2$ (D) $A + B$
$(A) \frac{1}{2}$ $(C) \frac{2}{\sqrt{3}}$	$ (B) \frac{\sqrt{3}}{2\sqrt{2}} $ $ (D) \frac{\sqrt{3}}{2} $	9. Consider the system of	linear equations
2 . The solution of $\triangle ABC$ gi 105° and $c = \sqrt{2}$ is	ven that $B = 45^\circ$, $C =$	$ \begin{array}{r} 3x_1 + 7x_2 \\ x_1 + 2x_2 + \\ 2x_1 + 3x_2 \end{array} $	$x_{3} = 2$ - $x_{3} = 3$ + $4x_{3} = 13$
(A) $A = 30^{\circ}, a = \sqrt{3} - 1, b$ (B) $A = 30^{\circ}, a = \sqrt{3} + 1, b$	$= \sqrt{2}(\sqrt{3} - 1)$ $= \sqrt{2}(\sqrt{3} - 1)$	The system has (A) infinitely many solution	ons
(C) $A = 30^{\circ}, a = 1 - \sqrt{3}, b$ (D) $A = 30^{\circ}, a = \sqrt{3} - 1, b$	$= \sqrt{2}(\sqrt{3} + 1)$ $= \sqrt{2}(\sqrt{3} + 1)$	(C) a unique solution (D) no solution	
3 . If $\tan \theta = \frac{b}{a}$, then the value (A) <i>b</i>	lue of $a \cos 2\theta + b \sin 2\theta$ is (B) a	10 . If α , β are the roots of $4 = 0$, then the value of α^6	the equation $x^2 - 2x + \beta^6$ is
(C) $\frac{a}{b}$	$(D)\frac{a}{a+b}$	(A) 64 (C) 256	(B) 128 (D) 132
4 . The general solution of (A) $2n\pi \pm \frac{\pi}{c}$	$\sqrt{3}\cos x + \sin x = 3$ is (B) $2n\pi \pm \frac{\pi}{2}$	11. If θ is the angle between $[a, b]$, then θ is equal to	en a and b and $ a \times b =$
(C) no solution	(D) $n\pi \pm \frac{\pi}{6}^{3}$	(A) 0 (C) $\pi/2$	(B) π (D) $\pi/4$
5. The value of $\frac{1-\tan^2 15^\circ}{1+\tan^2 15^\circ}$ is		12 . <i>ABCD</i> is a parallelogra	m with AC and BD as
(A) 1	(B) √3	diagonals. Then, $AC - BD$	is equal to
(C) $\frac{\sqrt{3}}{2}$	(D) 2	(A) 4 <i>AB</i> (C) 2 <i>AB</i>	(B) <i>3AB</i> (D) <i>AB</i>
6. A random variable X has distributionX0123	s the following probability	13 . If sin <i>x</i> , cos <i>x</i> and tan <i>x</i> $cot^2 x$ will be equal to	are in GP, then $cot^6x -$
$\begin{array}{ c c c c c } P(X & a & 3a & 5a & 7a \\ \hline = x & & & \\ \hline \end{array}$	9a 11a 13a 15a 17a	(A) 2 (C) 1	(B) -1 (D) 0
Then, the value of 'a' is (A) $1/81$	(B) 2/82	14 . The greatest angle of t	he triangle whose sides
(C) 5/81	(D) 7/81	are $x^2 + x + 1$, $2x + 1$, $x^2 - 1$	– 1, is
7 The sum of $11^2 \pm 12^2 \pm 12^2$	$\dots + 20^2$	(A) 150° (C) 135°	(B) 90° (D) 120°
(A) 8070	(B) 9070	(0) 135	(<i>D</i>) 120
(C) 1080	(D) 9700	15 . The general value of θ $2sin^2x - 3\sin\theta - 2 = 0, \pm$	satisfying the equation is
8 . If <i>A</i> and <i>B</i> are two square	The matrices such that $B =$	(A) $n\pi + (-1)^n \frac{\pi}{6}$	(B) $n\pi + (-1)^n \frac{\pi}{2}$
$-A^{-1}BA$, tehn $(A + B)^2$ wi	ll be equal to	(C) $n\pi + (-1)^n \frac{5\pi}{6}$	(D) $n\pi + (-1)^n \frac{2\pi}{6}$

E.

acmeacademy.in



16 If $2r + 3y - 6 = 0$ and	19r + 6v - 18 - 0 cuts	(A) 16	(B) 36
the axes in concylic points	s, then the centre of the	(C) 60	(D) 180
circle is (A) (2, 3) (C) (5, 5)	(B) (3, 2) (D) $\left(\frac{5}{2}, \frac{5}{2}\right)$	25 . An anti-aircraft gun c slots at an enemy plane probabilities of hitting th	an take a maximum of four moving away from it. The e plane at the first, second,
17 . The number of distinct system of equations $x^2 =$ where ' <i>a</i> ' is any real numb (A) 0, 1, 2, 3, 4 or 5	t solutions (x, y) of the y^2 and $(x - a)^2 + y^2 = 1$, per, can only be (B) 0, 1 or 3	third and fourth slots respectively. The probab plane, then is (A) 0.5	are 0.4, 0.3, 0.2 and 0.1 bility that the gun hits the (B) 0.7235
(C) 0, 1, 2 or 4	(D) 0, 2, 3 or 4	(C) 0.6976	(D) 1.0
18 . The vertex of parabola (A) (3, 4) (C) (1, 3)	$xy^2 - 8y - x + 19 = 0$ is (B) (4, 3) (D) (3, 1)	 26. The least integral value +8x + k + 4 > 0 for all x (A) 5 (C) 3 	the of k for which $(k - 2)x^2 \in R$, is (B) 4 (D) 6
19 . The eccentricity of elli	pse $9x^2 + 5y^2 - 30y = 0$		$\Gamma(2n)$ ²
is		27 . If for $n \in N$, $\sum_{k=0}^{2n} (-1)$	$\binom{2\pi}{k} \begin{bmatrix} \binom{2\pi}{k} \end{bmatrix} = A$, then the
(A) 1/3 (C) 3/4	(B) 2/3 (D) 1/4	value of $\sum (-1)^k (k-2n)$	$\binom{2n}{l}^2$ is
		(A) <i>nA</i>	(B) - nA
20. If the function $f: [1, \infty]$	$\rightarrow [1, \infty)$ is defined by	(C) 0	(D) A
$f(x) = 2^{x(x-1)}$, then 1 (2) (A) $(1/2)^{x(x-1)}$	(B) $\frac{1}{4}$ {1 + (1 + 4 log x)	28 . Solution set of the ine	quality
(f) $(1/2)$	(D) Not defined	$\log_3(x+2)(x+4) + \log_1$	$r_{1/3}(x+2) < \frac{1}{2} \log_{\sqrt{3}} 7$ is
$(0) - \frac{1}{2} \{1 - \sqrt{1 + 4 \log_2 x}\}$	(D) Not defined	(A) (-2, -1)	(B) (-2,3)
21 . A polygon has 44 diagon	onals, the number of its	(C) (-1,3)	(D) (3,∞)
(A) 9	(B) 10	29 . If three positive real n	umbers a, b, c(c > a) are
(C) 11	(D) 12	in HP, then $\log(a + c) + \log(a + c)$	$\log(a-2b+c)$ is
22 Lot V he the universal	act for acts 4 and D	(A) $2\log(c-b)$	(B) $2\log(a+c)$
If n(A) = 200 n(B) = 300) and $n(A \cap B) = 100$ then	$(C) \ge \log(C - u)$	$(D) \log u + \log b + \log c$
$n(A' \cap B')$ is equal to 300	provided $n(X)$ is equal to	30 . The area enclosed wit	hin the lines $ x + y = 1$
(A) 600	(B) 700	is (A) 1	
(C) 800	(D) 900	(A) 1 (C) 3	(B) 2 (D) 4
23 . In a college of 300 stud	lents, every student reads	21 If the mean of the same	are of first n natural
5 newspapers and every n	ewspaper is read by 60	51 . If the mean of the squa	

numbers be 11, un	en <i>n</i> is equal to
$(A) - \frac{13}{2}$	(B) 11
(C) 5	(D) 4

32. The probability of a razor blade to be defective is 0.002. The blades are in packet of 10. The number of packets containing no defective blades in a stock of 10000 packets is

students. The number of newspapers is

(B) almost 20

(D) exactly 28

24. The number of ways of forming different nine-

digit numbers from the number 223355888 by

rearranging its digit, so that the odd digits occupy

(A) atleast 30

(C) exactly 25

even positions is

acmeacademy.in

(A) 2000	(B) 9802
(C) 9950	(D) 8000

33. Two variables have least square regression lines 3x + 2y = 26 and 6x + y = 31, then correlation between *x* and *y* is (A) 0.5 (B) 0.7 (C) -0.7 (D) -0.5

34. A car completes the first half of its journey with a velocity v_1 and the rest half with a velocity v_2 . Then, the average velocity of the car for the whole journey is

(A) $\frac{v_1 + v_2}{2}$	(B) $\sqrt{v_1 v_2}$
$(C) \frac{2v_1v_2}{v_1 + v_2}$	(D) None <mark>of thes</mark>

35. The mean of first *n* natural numbers is equal to n^{+7} then (*n*) is equal to

$\frac{1}{3}$, then <i>n</i> is equal to	
(A) 9	(B) 10
(C) 11	(D) 12
(C) 11	(D) 12

36. $\int_0^{1/2} \frac{\mathrm{dx}}{\sqrt{x-x^2}}$ will	l be equal to
(A) $\pi/2$	(B) π
(C) π/3	(D) π

37. If the area bounded by $y = x^2$ and y = x is A sq units, then the area bounded by $y = x^2$ and y = 1 is (A) (2A + 1) sq units (B) 2A sq units (C) (2A + 2) sq units (D) (A + 2) sq units

38. If *a*, *b* and *c* are unit coplanar vectors, then the scalar triple product [2a - b, 2b - c, 2c - a] will be equal to (A) 0 (B) 1

(A) 0 (C) $-\sqrt{3}$

39. Let a = xi - 3j - k and b = 2xi + xj - k. Suppose that the angle between *a* and *b* is acute and

(D) $\sqrt{3}$

Reasoning/Aptitude:

Directions (Q. no. 46-48) Read the information given below and answer the questions that follow.

Four persons *A*, *B*, *C* and *D* play a cards game. They put \gtrless 500 as stake money. When the game is over '*C*' receives \gtrless 19 more that '*D*' and '*B*' receives \gtrless 21 less

the angle between *b* and the positive direction of the *y*-axis lies between $\frac{\pi}{2}$ and π . Then, the set of all

possible values of x is	
(A) {1, 2}	(B) {−2, −3}
(C) $\{x: x < 0\}$	(D) $\{x: x > 0\}$

40. Let v = 2i + j - k and w = i + 3k. If u is a unit vector, then the maximum value of the scalar triple product [u v w] is

(A) −1	(B) $-\sqrt{10} - \sqrt{6}$
(C) √59	(D) $\sqrt{10} + \sqrt{6}$

41. The minimum value of px + qy, when $xy = r^2$ is (A) $2r\sqrt{pq}$ (B) $2pq\sqrt{r}$

(C) $-2r\sqrt{pq}$ (D) \sqrt{pqr}

42. If '*a*' is a positive integer, then the number of values satisfying $\int_0^{\pi/2} \left\{ a^2 \left(\frac{\cos 3x}{4} + \frac{3}{4} \cos x \right) + \right\}$

a sin x — 20 co	sx dx $\leq \frac{-a^2}{3}$ is
(A) only one	(B) two
(C) three	(D) four

43. Find $\frac{d}{dx} \left(\sqrt{x} - \frac{5}{\sqrt{x}} \right)$. (A) $\frac{1}{2\sqrt{x}} + \frac{3}{2} x^{-3/2}$ (B) $2x - \frac{5}{2} x^{3/2}$

44. $\lim_{x \to \infty} \sqrt{\frac{(x+\sin x)}{(x-\cos x)}}$ is equal to (A) 0 (B) 1 (C) -1 (D) None of these

(C) $2x + \frac{5}{2}x^{-3/2}$

45. If $f(x) = \int_0^x t \sin t \, dt$, then f'(x) is (A) $\cos x + x \sin x$ (B) $x \sin x$ (C) $x \cos x$ (D) $x^2/2$

than 'A' whose amount was $\gtrless 2$ less than the quarter of $\gtrless 500$.

46. How much money did 'C' get?
(A) ₹ 147
(B) ₹ 136
(C) ₹ 144
(D) ₹ 159



47 . How much mone	y did 'B' get?
(A) ₹ 102	(B) ₹ 107
(C) ₹ 108	(D) ₹ 110

48 . Who get t	ne highest amount?
-----------------------	--------------------

(A) A	(B) B
(C) C	(D) D

Directions (Q. Nos. 49-51) In the following diagram circle stands for 'educated', square for 'hardworking', triangle for 'urban people', and rectangle for 'honest'. Different regions in the diagram are numbered from 2 to 12. Study the diagram carefully and answer.



49. Educated, hardworking and urban people are indicated by

(A) 7	(B) 2
(C) 3	(D) 4

50. Non-urban educated people who are neither hardworking nor honest are indicated by
(A) 5
(B) 7
(C) 10
(D) 12

51. Honest, educated and hardworking non-urban people are indicated by

(B) 4

(D) 9

(A) 3		
(C) 6	-	

52. Mr *X* left his entire estate to his wife, his daughter, his son and the cook, his daughter and son got half the estate, sharing in the ratio of 4 to 3. His wife got twice as much as the son. If the cook received a bequest of \gtrless 500, then the entire estate was

(A) ₹ 3500	(B)₹5500
(C) ₹ 6500	(D) ₹ 7000

53. At a dance party a group of girls and boys exchange dances as follows.

One boy dances with 5 girls, second boy dances with 6 girls, and so on last boy dances with all girls. If *b* represents the number of boys and *g* represents the number of girls, then

(A) b = g	(B) $b = \frac{g}{5}$
(C) $b = g - 4$	(D) $b = g - 5$

54. The average age of husband and wife was 22 yr when they were married five years back. What is the present average age of the family, if they have a three years old child?

(A) 19 yr	(B) 25 yr
(C) 27 yr	(D) $28\frac{1}{2}$ yr

55. Which of the following will be acceptable for establishing a fact?

(A) Opinion of large number of people

(B) Traditionally in practice over a long period of time

(C) Availability of observable evidences

(D) References in the ancient literature

Directions (Q. Nos. 56-59) Six scientists A, B, C, D, Eand F are to present at paper each at a one-day conference. Three of them will present their papers in the morning session before the lunch break whereas the other three will be presented in the afternoon session. The lectures have to be scheduled in such a way that they comply with the following restrictions.

B should present his paper immediately before *C*'s presentations; their presentations cannot be separated by the lunch break. *D* must be either the first or the last scientist to present his paper.

56. In case *C* is to be the fifth scientist to present his paper, then *B* must be

(A) first	(B) second
(C) third	(D) fourth

57. *B* could be placed for any of the following places in the order of presenters EXCEPT

(A) second	(B) third
(C) fourth	(D) fifth



58. In case *F* is to present his paper immediately after *D* presents his paper, *C*'s could be scheduled for which of the following places in the order of presenters?

(A) Second (C) Fourth

(B) Third(D) Fifth

59. In case *F* and *E* are the fifth and sixth presenters respectively, then which of the following must be true?

- (A) A is first in the order of presenters
- (B) A is third in the order of presenters
- (C) *A* is fourth in the order of presenters
- (D) *B* is first in the order of presenters

Directions (Q. Nos. 60-63) Study the following information to answer the given questions.
(i) In a family of 6 person, there are two couples.
(ii) The lawyer is the head of the family and has only two sons-Mukesh and Rakesh both teachers.
(iii) Mrs Reena and her mother-in-law both are lawyers.

(iv) Mukesh's wife is a doctor and they have a son, Ajay.

60. What is the	profession of Rakesh's wife?	
(A) Teacher	(B) Doctor	
(C) Lawyer	(D) None of these	

61. How many male members are there in the family?

(A) Two (C) Four

(B) Three(D) None of these

(B) Lawyer

62. What is/was Ajay's grandfather's occupation?

(A) Teacher

(C) Doctor determined (D) Cannot be

63. What is the profession of Ajay?

(A) Teacher(C) Doctor

determined

(B) Lawyer (D) Cannot be

(D) C

Directions (Q. Nos. 64-66) Mrs Thomas received a large order for stitching school uniforms from May flower school and Little flower school. She has two cutters who will cut the fabric, five tailors who will do the stitching and two assistants to stitch the buttons

and button holes. Each of these nine persons will work for exactly 10 h a day. Each of the May flower uniforms requires 20 min for cutting the fabric, one hour for stitching, and 15 min for stitching buttons and button holes, whereas the Little flower uniform requires 30 min, 1 h and 30 min respectively for these activities.

64. What is the number of Little flower uniforms that Mrs Thomas can complete in a day?

(A) 50	(B) 20
(C) 40	(D) 30

65. On a particular day, Mrs Thomas decided to complete 20 Little flower uniforms. How many May flower uniforms can she complete on that day? (A) 30 (B) 40

(1) 50	
(C) 20	(D) 0

66. If she hires one more assistant, what is the maximum number of May flower uniforms that she can complete in a day?

(A) 40	(B) 50
(C) 60	(D) 30

67. In a certain code, RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?

(A) 318826	(B) 318286
(C) 618826	(D) 328816

68. A doctor said to his compounder "I go to see the patients at their residence after every 3:30 h. I have already gone to the patient 1:20 h ago and next time I shall go at 1:40 pm". At what time this information was given to the compounder by the doctor?

(A) 10:10 am (C) 11:20 am (B) 11:30 am(D) None of these

Direction (Q. No. 69) In the following question, three statements are followed by a conclusion. Study the statements and the conclusion and point out which statement studied together will bring to the conclusion

69. Statements

(i) Price rise is natural phenomenon.

(ii) If production increases prices fall.

(iii) High prices affect the poor.

acmeacademy.in

Conclusion

If production rises the poor feel relieved.

Answer choices

(i) Only (i) and (ii)	(B) Only (i) and (iii)
(C) Only (ii) and (iii)	(D) Data insufficient

70. In how many different ways can the letters of the word "DETAIL" be arranged in such a way that the vowels occupy only the odd positions?

(A) 32	(B) 36
(C) 48	(D) 60

71. If from 4 to 55 the numbers which are divisible by 3 and the numbers which contain 3 as one of the digits, are removed, then how many numbers will be left?

(A) 24	(B) 23
(C) 22	(D) 25

72. In the following number-series, one term is wrong. Which term is wrong? 5, 12, 19, 33, 47, 75, 104

, ,	,	,	,	
(A) 33				(B) 47
(C) 75				(D) 104

73. The positions of *A* in a class is 5th from the top and position of *B* is 7th from the bottom. If *C* is at 6th place after *A* and 6th place before *B*, how many students are there in the class?

(A) 25	(B) 23
(C) 21	(D) 22

74. Suppose $X = 2^{100}$, $Y = 3^{100}$ and $Z = 4^{100}$.Exactly one of the following is true. Which is it?(A) X + Y = Z(B) X + Y < Z(C) X + Y > Z(D) XY = Z

75. Assume that the following three statements are true

A. All freshmen are human.

B. All students are human.

C. Some students think.

Given the following four statements.

I. All freshmen are students.

II. Some humans think.

III. No freshman thinks.

IV. Some humans who think are not students.

(A) II	(B) IV
(C) II, III	(D) I, II

76. Five persons A, B, C, D and E were travelling in a car. There were two ladies in the group. Two new car driving, of them one was a lady. A is brother of D. B wife of D drove at the beginning. E drove at the end. Who was the other lady in the group? (A) D (B) B (C) C (D) E

77. Choose which pair of numbers carries next in the following sequence.

61, 57, 50, 61, 43, 36, 61	
(A) 29, 61	(B) 27, 20
(C) 31, 61	(D) 29, 22

78. Correct the following equation by inter-changing two signs.

	$3 - 9 \times 27 + 9 \div 3 = 3$
(A) + and –	(B) × and +
$(C) \times and \div$	(D) × and –

79. Pushpa is twice as old as Rita was two years age. If the difference between their ages be 2 yr, how old is Pushpa today?

(A) 6 yr	(B) 8 yr
(C) 10 yr	(D) 12 yı

80. A clock is set right at 8 am. The clock gains 10 min in 24 h. What will be the right time when the clock indicates 1 pm on the following day?

(A) 11:40 pm	(B) 12:48 pm
(C) 12 noon	(D) 10 pm

81. Choose the best answer figure to substitute element 4 in the problem figures so that element 3 is related to element 4 in the same way as element 1 is related to element 2.

Problem Figures







Direction (Q. No. 82) In the following question, below are given two statements followed by four conclusions numbered *I*, *II*, *III*, *IV*. You have to take the two given statements to be true, even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follow from the two given statements, disregarding commonly known facts.

82. Statements

A. Some green are blue. B. No blue is white.

Conclusions

- I. Some blue are green.II. Some white are green.III. Some green are not white.IV. All white are green.
- (A) Only I follows(B) Only II and III follows(C) Only I and III follows(D) Only I and II follows

Directions (Q. Nos. 83-85) In each of the 3 questions below, are given four statements followed by four conclusions numbered *I*, *II*, *III*, *IV*. You have to take the given statements to be true even, if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given

conclusions logically follows from the given statements, disregarding commonly known facts.

83. **Statements** Some doctors are lawyers. All teachers are lawyers. Some engineers are lawyers. All engineers are businessman.

Conclusions

I. Some teachers are doctors.

- II. Some businessmen are lawyers.
- III. Some businessmen are teachers.
- IV. Some lawyers are teachers.
- (A) None follows(B) Only II follows(C) Only III follow(D) Only II and IV follow

84. Statements

All plastics are glasses. Some sponges are glasses. All sponges are clothes. All clothes are liquids.

Conclusions

I. All liquids are sponges.II. Same plastics are clothes.III. Some glasses are plastics.IV. All liquids are clothes.

(A) None follows

- (B) Only either II or IV follows
- (C) Only III and IV follow
- (D) Only I and IV follow

85. **Statements** All sands are beaches. All shores are beaches. Some beaches are trees. All trees are hotels.

Conclusions

I. Some shores are hotels. II. All beaches are shores. III. Some beaches are hotels. IV. Some sands are trees.

- (A) Only III follows
- (B) Only II follows
- (C) Only IV follows
- (D) None of the above

Computer:

86. The ASCII code of A is (A) 66D (C) 01000010	(B) 41H (D) 01100011	Boolean expression x. (x - (A) y (C) 0	+ y)? (B) 1 (D) x
87. An eight bit byte is cap many different characters(A) 64(C) 256	bable of representing how ? (B) 128 (D) 512	91. Which one of the follow Boolean algebra? (A) $A + 1 = 1$ (C) $AA = A$	wing is not a valid rule of (B) $A = A'$ (D) $A + 0 = A$
88. The least significant b which is equivalent to any (A) 0 (C) 1 or 0 89. Which of the following represents the shaded por X Y $Y(A) Z' + (X, Y)(C) (Z, X') + Y$	 it of the binary number, y odd decimal number is (B) 1 (D) All of these g Boolean expression rtion of the Venn diagram? (B) Z. (X + Y) (D) Z'. (X + Y) 	 92. When two binary numoverflow will never occur; (A) both numbers of same (B) the carry into the sign sign bit position are not equal (D) the carry into the sign sign bit position are equal (D) the carry into the sign 93. The sum of 11010 + 0 (A) 101001 (C) 110101 94. Which protocol needs access on a network? (A) TCP/IP (C) IPX/SPX 95. A petabyte represents 	bers are added, then an if e sign bit position and out of qual bit position and out of bit position is 1 1111 equals to (B) 101010 (D) 101000 to be installed for Internet (B) TELNET (D) Net BEUI approximately
90. Consider <i>x</i> and <i>y</i> be some Boolean variables, '+' denotes the OR operation and "." denotes the AND		(A) 1000 gigabytes (C) 1000 terabytes	(B) 1000 kilobytes (D) 1000 yottabytes
English:			
96. I have been working h	ere six months.	is most similar in meanin	g to the word in capital
(A) since	(B) by	letters.	
(C) for	(D) in	98 POLEMIC	
97. Defile		(a) black	(B) magnetic
(A) Pollute	(B) Disapprove	(C) grimace	(D) controversial
(C) Delay	(D) Reveal	00 The amonum for work FOOL HADDY is	
Directions (A Nos 98-101) Each quartian consists		(A) Erudite	(B) Unwise
of a word printed in capital letters, followed by four		(C) Rusty	(D) Roll

E.

words or phrases. Choose the word or phrase that

(T) acmeacademy.in



100. DEEP (A) low (C) flat

(B) distracted (D) awake

101. Give the antonym for CRYPTIC

(A) Futile	(B) Candid
(C) Famous	(D) Indifferent

Directions (Q. Nos. 102-111) Answer the following questions based on the given paragraph. A recent experimental study showed for the first time that pulmonary exposure to the Particulate Matter (PM) within diesel exhaust enhances atherogenesis. The human blood vessel endothelium is a sensitive target for air pollutants. The interactions of the inflammation and coagulation systems are of the main mechanisms involved in impairment of endothelial function and eventually cardiovascular diseases. The effect of air pollution on inflammation. oxidative stress and cardiovascular risk factors has been demonstrated only in older adults, but also in young adults as well as in children and adolescents. The inflammation process stimulates the coagulation system and result in increased secretion of Tissue Factor (TF). Endothelial function has key roles in anticoagulant and fibrinolytic systems. In vitro studies have demonstrated significant decrease in endogenous anticoagulation activity, Thrombo Modulin (TM), endothelial protein C receptor antigen and culture of endothelial cells during the inflammation process. A growing body of evidence suggests that the effects of air pollution on the inflammation and the coagulation systems may have a role in endothelial dysfunction and in turn in the progression of cardiovascular diseases. Findings of experimental studies suggest that exposure to air pollution may result in increase in TF and decrease in TM. Atherogenesis starts from the fatal life through interrelations or traditional risk factors with inflammatory immune and endothelial biomarkers. Air pollution has various harmful effects on this process from early life. Studying the effects of environmental factors on early stages of atherosclerosis in early life can help identify the underlying mechanisms.

102. Choose the option for the human system mechanisms whose interactions eventually result into cardiovascular diseases due to air pollution?(A) inflammation (B) Coagulation

(D) Both (A) and (B)

103. Which is the central syndrome talked about in the paragraph?

(A) Inflammation

(C) Antigen

- (B) Atherogenesis
- (C) Secretions of tissue factors
- (D) Thrombo Modulin

104. Which of the following is true?

(i) Exposure to air pollution may result in increase in TF and decrease in TM.

(ii) Effect of air pollution is severe on humans and occurs after adolescence.

(iii) Endothelial cells are sensitive target for air pollutants.

- (A) All are true
- (B) Only (i) and (ii) are true
- (C) Only (i) and (iii) are true
- (D) Only (ii) and (iii) are true

105. Th<mark>e primary cause of cardiovas</mark>cular disease due to factors discussed in paragraph is

- (A) lack of immunity
- (B) anticoagulation
- (C) thrombo modulin
- (D) endothelial Dysfunction

106. RETROGRADE (A) progressing

(C) evaluating

(B) declining(D) directing

107. The people _____ you socialize are called friends.(A) with whom(B) who(C) with who(D) whom

108. Every one of them _	to the music every			
day.				
(A) listen	(B) listening			

(C) listens (D) None of these

109. I didn't work hard when I was _____ school.(A) in(B) on(C) at(D) by



ENTRANCE ACADEMY

Answer Key

1.	В	13. C	25. C	37. A	49. B	61. B	73. B	85. A	97. B	109. A
2.	А	14. D	26. A	38. A	50. B	62. B	74. B	86. B	98. D	110. A
3.	В	15. D	27. B	39. C	51. D	63. D	75. A	87. C	99. B	111. A
4.	С	16. D	28. B	40. C	52. D	64. C	76. C	88. B	100. A	112. B
5.	С	17. D	29. C	41. A	53. C	65. A	77. D	89. B	101. B	113. D
6.	А	18. A	30. B	42. D	54. A	66. B	78. D	90. D	102. D	114. D
7.	В	19. B	31. C	43. D	55. C	67. A	79. B	91. B	103. A	115. A
8.	С	20. C	32. B	44. B	56. D	68. B	80. B	92. D	104. B	116. C
9.	А	21. C	33. D	45. B	57. B	69. C	81. B	93. A	105. B	117. C
10.	В	22. B	34. C	46. A	58. D	70. B	82. C	94. A	106. B	118. D
11.	D	23. C	35. C	47. A	59. C	71. D	83. D	95. C	107. A	119. D
12.	С	24. C	36. A	48. C	60. C	72. D	84. A	96. C	108. C	120. C



Ľ.

<u>Solution</u>

1. (b) ∴ sin 30° cos 45° + cos 30° sin 45°

$$= \frac{1}{2} \times \frac{1}{\sqrt{2}} + \frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{2}} = \frac{1 + \sqrt{3}}{2\sqrt{2}}$$
2. (a) Since, ∠ A + ∠ B + ∠ C = 180°
∴ ∠ A = 180° - 45° - 105° = 30°
Using sine rule, $\frac{sin A}{a} = \frac{sin B}{b} = \frac{sin C}{c}$

$$\Rightarrow \frac{sin 30°}{a} = \frac{sin 45°}{b} = \frac{sin 105°}{\sqrt{2}}$$

$$\Rightarrow \frac{1}{2a} = \frac{1}{\sqrt{2b}} = \frac{sin 75°}{\sqrt{2}} = \frac{1 + \sqrt{3}}{2\sqrt{2} \times \sqrt{2}}$$

$$\Rightarrow \frac{1}{2a} = \frac{1}{\sqrt{2b}} = \frac{2}{4(\sqrt{3} - 1)} = \frac{1}{2(\sqrt{3} - 1)}$$

$$\Rightarrow a = \sqrt{3} - 1, b = \sqrt{2} (\sqrt{3} - 1)$$
3. (b) Given, $\tan \theta = \frac{b}{a}$
∴ a cos 20 + b sin 20

$$= a \left(\frac{1 - \tan^{2} \theta}{1 + \tan^{2} \theta}\right) + b \left(\frac{2 \tan \theta}{1 + \tan^{2} \theta}\right)$$

$$= a \left(\frac{1 - b^{2}/a^{2}}{1 + b^{2}/a^{2}}\right) + b \left(\frac{2ab}{a^{2} + b^{2}}\right) = \frac{a(a^{2} + b^{2})}{a^{2} + b^{2}} = a$$
4. (c) Given, $\sqrt{3} \cos x + \sin x = 3$
LHS = $\sqrt{3 + 1} \le \sqrt{3} \cos x + \sin x \le 3$
HHS = $\sqrt{3 + 1} \le \sqrt{3} \cos x + \sin x \le 3$
HHS = $\sqrt{3 + 1} \le \sqrt{3} \cos x + \sin x \le 3$
HHS = $\sqrt{3 + 1} \le \sqrt{3} \cos x + \sin x \le 3$
HHS = $\sqrt{3 + 1} \le \sqrt{3} \cos x + \sin x \le 3$
HHS = $\sqrt{3 + 1} \le \sqrt{3} \cos x + \sin x \le 3$
HHS = $\sqrt{3} \cos x + \frac{1}{2} \sin x = \frac{3}{2}$
Sin $\pi/3 \cdot \cos x \cdot \cos \pi/3 \cdot \sin x = 3/2$
But $\sin\left(\frac{\pi}{3} + x\right) = 3/2$
But $\sin\left(\frac{\pi}{3} + x\right) = 3/2$
But $\sin\left(\frac{\pi}{3} + x\right) \neq \frac{3}{2}$
 $\therefore -1 \le \sin x \le 1$
So, no solution exist.
5. (c) $\therefore \frac{1 - \tan^{2} 15^{2}}{1 + \tan^{2} 15} = \frac{\cos^{2} 15^{2} - \sin^{2} 15^{2}}{\cos^{2} 15^{2} + \sin^{2} 15^{2}} = \frac{\cos 30^{2}}{1} = \frac{\sqrt{3}}{2}$
6. (a) \therefore Sum of probabilities = 1
 $\therefore a + 3a + 5a + 7a + 9a + 11a + 13a + 15a + 17a = 1$
 $\Rightarrow 81a = 1$ $\Rightarrow a = \frac{1}{81}$

$$= (1^{2} + 2^{2} + \dots + 30^{2}) - (1^{2} + 2^{2} + \dots + 10^{2})$$
$$\left[\because \Sigma n^{2} = \frac{n(n+1)(2n+1)}{6} \right]$$

 $=\frac{30(30+1)(60+1)}{10\times(10+1)(20+1)}$ 6 $=\frac{56730}{2310} = \frac{2310}{54420} = 9070$ 6 6 6 8. (c) Given, $B = -A^{-1}BA \implies AB = -BA$ $\Rightarrow AB + BA = 0$ $\Rightarrow AB + BA = 0$ $\therefore (A + B)^2 = A^2 + B^2 + AB + BA = A^2 + B^2 \quad \text{[from Eq. (j)]}$ 9. (a) Given system of equations is $3x_1 + 7x_2 + x_3 = 2$ $x_1 + 2x_2 + x_3 = 3$ $2x_1 + 3x_2 + 4x_3 = 13$ 3 7 1 3 7 1 $1 \ 2 \ 1; |A| = 1 \ 2 \ 1$:. The coefficient matrix A =2 3 4 2 3 4 = 3(8 - 3) - 7(4 - 2) + 1(3 - 4) = 0 $5 -2 -17^{T}$ [5 -25 5] -25 10 5 -2 10 -2 adj(A) =-5 -2 -1 -1 5 -1 [10 - 75 + 65] [0] 5 -25 5] 2] 3 = |-4 + 30 - 26| = |0|:. (adj A) B = -2 10 -2 5 -1 13 -2 + 15 - 13 0 -1 Hence, it has infinite number of solutions. Alternate method 3 7 1:2 Augmented matrix [A, B] = 1 2 1:32 3 4:13 $R_1 \leftrightarrow R_2$ 1 2 1 : 3] 371:2 2 3 4 : 13 Use operations, $R_2 \rightarrow R_2 - 3R_1, R_3 \rightarrow R_3 - 2R_1$, [1 2 1 : 3] 0 1 -2 : -7 0 -1 2 : 7 $R_3 \rightarrow R_2 + R_3$ [1 2 1 : 3 0 1 -2 : -7 0 0 0 : 0 Here, Rank of [A, B] = Rank of A So, the system of equation is consistent. Also, here rank of A < Number of unknowns i.e., 2 < 3 Hence, the system has infinitely many solutions. **10.** (b) Here, $\alpha + \beta = 2$ and $\alpha\beta = 4 \implies (\alpha + \beta)^2 = 4$ $\alpha^2 + \beta^2 + 2\alpha\beta = 4 \Rightarrow \alpha^2 + \beta^2 = 4 - 2(4)^{=-4}$ \Rightarrow $\alpha^4 + \beta^4 + 2\alpha^2\beta^2 = 16$ => $\Rightarrow \alpha^4 + \beta^4 = 16 - 2 (16) = -16$ $\alpha^{6} + \beta^{6} = (\alpha^{2})^{3} + (\beta^{2})^{3}$ Now. $= (\alpha^2 + \beta^2)(\alpha^4 + \beta^4 - \alpha^2)^{\beta}$ = - 4 (-16 - 16) = 128

ACME ACADEMY India's Most Trustable MCA Entrance Academy

d) Case I. Number of distinct solutions is zero.



Case II. Number of distinct solutions is two.



Case III. Number of distinct solutions is three.



y = x

Case IV. Number of distinct solutions is four.

v = -xHence, option (d) is correct. (a) Given equation is, $y^2 - 8y - x + 19 = 0$ $(y-4)^2 = x - 19 + 16$ ⇒ $(y-4)^2 = x - 3$ ⇒ Hence, the vertex is (3, 4). (b) Given, $9x^2 + 5y^2 - 30y = 0$ $9x^2 + 5(y^2 - 6y) = 0$ ⇒ $9x^2 + 5(y - 3)^2 = 45$ \Rightarrow $\frac{x^2}{5} + \frac{(y-3)^2}{9} = 1$ ⇒ $a^2 = 5, b^2 = 9 \text{ and } b > a$ Here. $e = \sqrt{1 - \frac{a^2}{b^2}} = \sqrt{1 - \frac{5}{9}} = \frac{2}{3}$ *.*•. (c) Let $y = f(x) = 2^{x(x-1)}$ On taking log, we get $\log_2 y = x (x - 1) \log_2 2$ $x^2 - x - \log_2 y = 0$ ⇒ $x = \frac{1 \pm \sqrt{1 + 4 \log_2 y}}{2}$ $x = \frac{1 \pm \sqrt{1 + 4 \log_2 y}}{2}$ ⇒

.....

$$\begin{array}{c} \cdot & \Gamma^{+}(x) = \frac{1+\sqrt{1+4\log_{2} x}}{2} \\ \text{Since, for y \in [1-x], 4\log_{2} y \ge 0} \\ \Rightarrow & \sqrt{1+4\log_{2} y \ge 1} \\ \vdots & x = \frac{1-\sqrt{1+4\log_{2} y}}{2} \quad 0 \in [1-x] \\ \vdots & x = \frac{1-\sqrt{1+4\log_{2} y}}{2} \quad 0 \in [1-x] \\ \vdots & x = \frac{1-\sqrt{1+4\log_{2} y}}{2} \quad 0 \in [1-x] \\ \vdots & x = \frac{1-\sqrt{1+4\log_{2} y}}{2} \quad 0 \in [1-x] \\ \vdots & \frac{1-\sqrt{1-4}}{2} \quad 0 = \frac{1-\sqrt{1-4}}{2} \quad 0 =$$

E.

: Hence, least integral value of k is 5.

ACME ACADEMY India's Most Trustable MCA Entrance Academy

31. (c) According to the given condition. $\frac{1^2 + 2^2 + \dots + n^2}{n} = 11$ $\frac{n(n+1)(2n+1)}{6n} = 11$ $2n^2 + 3n - 65 = 0$ $n = \frac{-3 \pm \sqrt{9 + 8 \times 65}}{\sqrt{9 + 8 \times 65}}$ $=\frac{-3\pm\sqrt{529}}{4}=\frac{-3\pm23}{4}=5,-\frac{13}{2}$ (:: n cannot be negative) 32. (b) Since, probability of defective razor blade is 0.002, therefore, probability of non-defective razor blade is 0.998. .. Probability of non-defective razor blade in one packet $= {}^{10}C_{10} (0.998)^{10} = 0.980179$.: Required number of packets = 0.980179 × 10000 = 9801.79 = 9802 (approx) 33. (d) Let line of regression y on x is $y = -\frac{3}{2}x + 13$ and x on y is $x = -\frac{y}{6} + \frac{31}{6}$ $b_{yx} = -\frac{3}{2}$ and $b_{xy} = -\frac{1}{6}$:. $r = -\sqrt{b_{yx} \cdot b_{xy}}$... $=-\sqrt{\left(-\frac{3}{2}\right)\left(-\frac{1}{6}\right)}=-\sqrt{\frac{1}{4}}=-\frac{1}{2}=-0.5$ 34. (c) Let d be the distance in first half and second half respectively of the journey. Time taken in first half and second half journey are $\frac{d}{v_1}$ and $\frac{d}{v_2}$ respectively. Average velocity = Total distance Total time $\frac{2d}{\frac{d}{v} + \frac{d}{v}} = \frac{2v_1v_2}{v_1 + v_2}$ $\frac{n+7}{3} = \frac{n+7}{3}$ $\frac{1+2+...+n}{n} = \frac{n+7}{3}$ $\frac{n(n+1)}{2n} = \frac{n+7}{3}$ 1 + 3 = 2n + 335. (c) Since, mean = 3n + 3 = 2n + 14**36.** (a) $\int_{0}^{1/2} \frac{dx}{\sqrt{x-x^2}} = \int_{0}^{1/2} \frac{n}{\sqrt{x-x^2}} \frac{1}{\sqrt{x-x^2}} = \int_{0}^{1/2} \frac{dx}{\sqrt{x-x^2} + \frac{1}{4} - \frac{1}{4}}$ $= \int_{0}^{1/2} \frac{dx}{\sqrt{\frac{1}{4} - \left(x - \frac{1}{2}\right)^{2}}} = \left[\sin^{-1}\left(\frac{x - \frac{1}{2}}{\frac{1}{2}}\right)\right]_{0}^{n-1}$ $= [\sin^{-1}(2x-1)]_0^{1/2}$ $=\sin^{-1}(0) - \sin^{-1}(-1) = 0 - \left(-\frac{\pi}{2}\right) = \frac{\pi}{2}$

1

37. (a) Since, it is given area of curve OAO = A



Now, area of $\triangle OAB = \frac{1}{2} \times 1 \times 1 = \frac{1}{2}$

Area of curve OABO = $A + \frac{1}{2}$

.: Total required area = area of curve OABCO

$$= 2 (area of curve OABO)$$
$$= 2 \left(A + \frac{1}{2}\right) = (2A + 1) \text{ sq unit}$$

38. (a) \therefore (2a - b) \cdot [(2b - c) \times (2c - a)]

$$= (2\mathbf{a} - \mathbf{b}) \cdot [(2\mathbf{b} \times 2\mathbf{c}) - (2\mathbf{b} \times \mathbf{a}) - 0 + (\mathbf{c} \times \mathbf{a})]$$

= {8[a b c] - 0 + 0 - 0 + 0 - [b c a]}
= 7 [a b c] = 0 [: [a b c] = 0 (given)]

39. (c) Since, the angle between the vectors a and b is acute and the angle between b and y-axis lies between $\frac{\pi}{2}$ and π , it

$$\therefore \mathbf{a} \cdot \mathbf{b} > 0 \text{ and } \mathbf{b} \cdot \mathbf{j} < 0$$

$$\Rightarrow (\mathbf{x}\mathbf{i} - 3\mathbf{j} - \mathbf{k}) \cdot (2\mathbf{x}\mathbf{i} + \mathbf{x}\mathbf{j} - \mathbf{k}) > 0 \text{ and } (2\mathbf{x}\mathbf{i} + \mathbf{x}\mathbf{j} - \mathbf{k}) \cdot \mathbf{j} < 0$$

$$(2x-1)(x-1) > 0$$
 and $x < 0$

 $\left(x < \frac{1}{2} \text{ or } x > 1\right)$ and $x < 0 \Rightarrow x < 0$

40. (c) Given, v = 2i + j - k and w = i + 3k

$$\Rightarrow [\mathbf{u} \vee \mathbf{w}] \leq |\mathbf{v} \times \mathbf{w}| \qquad (\because \mathbf{a} \cdot \mathbf{b} \leq |\mathbf{a}| |\mathbf{b}|)$$

$$\Rightarrow [\mathbf{u} \vee \mathbf{w}] \leq |\mathbf{v} \times \mathbf{w}| \qquad (\because |\mathbf{u}| = 1)$$
Now, $\mathbf{v} \times \mathbf{w} = \begin{vmatrix} \mathbf{i} & \mathbf{j} & \mathbf{k} \\ 2 & 1 & -1 \\ 1 & 0 & 3 \end{vmatrix}$

$$\Rightarrow |\mathbf{v} \times \mathbf{w}| = \sqrt{3^2 + 7^2 + 1^2} = \sqrt{59}$$

41. (a) Given, $xy = r^2$

=

Let
$$u = px + qy$$

 $\Rightarrow \quad u = px + q\left(\frac{r^2}{x}\right) \Rightarrow \frac{du}{dx} = p - \frac{qr^2}{x^2}$

...(i) [from Eq. (i)]

For maxima and minima, put $\frac{du}{dt} = 0$

$$\Rightarrow \qquad p - \frac{qr^2}{x^2} = 0 \Rightarrow x = \pm r \sqrt{\frac{q}{p}}$$
Now,
$$\frac{d^2u}{dx^2} = \frac{2qr^2}{x^3}$$

ACME ACADEMY India's Most Trustable MCA Entrance Academy

...

At

$$x = r \frac{\sqrt{q}}{p}$$

$$\frac{d^2 u}{dx^2} > 0, \text{ minima}$$

$$\therefore \text{ Minimum value is } u = p \times r \sqrt{\frac{q}{p}} + q \left(\frac{r^2}{r\sqrt{\frac{q}{p}}}\right)$$

$$= pr \sqrt{\frac{q}{p}} + qr \sqrt{\frac{p}{q}}$$

$$= r\sqrt{pq} + r \sqrt{pq} = 2r \sqrt{pq}$$
42. (d) Given,
$$\int_0^{\pi/2} \left\{ a^2 \left(\frac{\cos 3x}{4} + \frac{3}{4}\cos x\right) + a\sin x - 20\cos x \right\} dx \le -\frac{a^2}{3}$$

$$\Rightarrow \left[a^2 \left(\frac{\sin 3x}{12} + \frac{3}{4}\sin x\right) - a\cos x - 20\sin x \right]_0^{\pi/2} \le -\frac{a^2}{3}$$

$$\Rightarrow \left[a^2 \left(-\frac{1}{12} + \frac{3}{4} - 0 - 0\right) - a(0 - 1) - 20(1 - 0) \right] \le -\frac{a^2}{3}$$

$$\Rightarrow \frac{8a^2}{12} + a - 20 \le -\frac{a^2}{3}$$

$$\Rightarrow a^2 + a - 20 \le 0 \Rightarrow (a - 4)(a + 5) \le 0$$

$$+ \frac{-}{-\infty} + \frac{+}{-5 \le a \le 4}$$

Since, a is a positive integer, hence four values of a (i.e., 1, 2, 3, 4) exist.

43. (d)
$$\frac{d}{dx}\left(\sqrt{x} - \frac{5}{\sqrt{x}}\right) = \frac{x^{-1/2}}{2} + \frac{1}{2}5x^{-3/2} = \frac{1}{2\sqrt{x}} + \frac{5}{2}x^{-3/2}$$

44. (b) $\lim_{x \to \infty} \sqrt{\frac{x + \sin x}{x - \cos x}} = \lim_{x \to \infty} \sqrt{\frac{1 + \frac{\sin x}{x}}{1 - \frac{\cos x}{x}}} = \sqrt{\frac{1 + 0}{1 - 0}} = 1$

45. (b) Given, $f(x) = \int_0^x t \sin t \, dt$

On differentiating w.r.t. x, we get

 $f'(x) = x \sin x$ (by Leibnitz theorem)

A's amount = 500 × $\frac{1}{4}$ - 2 = ₹ 123

∴B's amount = ₹123 - ₹21= ₹102

- (A's + B's) amount = ₹ 123 + ₹ 102 = ₹ 225 Remaining amount = ₹ 500 - ₹ 225 = ₹ 275
- D's amount = ₹ 128
- C's amount = ₹ 128 + ₹ 19 = ₹ 147
- 46. (a) C's amount = ₹ 147
- 47. (a) B's amount = ₹ 102
- 48. (c) C get the highest amount ₹ 147.
- 49. (b) Number 2 represents the educated, hardworking and urban people.
- 50. (b) Number 7 represents non-urban educated people who are neither hardworking nor honest.
- **51.** (d) Number 9 represents honest, educated and hardworking non-urban people.

- 52. (d) Let the entire estate was ₹ x. (Daughter + Son)'s estate = $\overline{\mathbf{v}} = \frac{x}{2}$ ∴ Daughter and son sharing ratio is 4 : 3. ∴ Daughter's estate = ₹ $\frac{x}{2} \times \frac{4}{7} = ₹ \frac{4x}{14}$ Son's estate = $\overline{\overline{x}} \frac{x}{2} \times \frac{3}{7} = \overline{\overline{x}} \frac{3x}{14}$ So, mother's estate = $2 \times \overline{\xi} \frac{3x}{14} = \overline{\xi} \frac{6x}{14}$ Remaining estate = $x - \left(\frac{x}{2} + \frac{6x}{14}\right) = x - \frac{13x}{4} = ₹ \frac{x}{14}$ $\frac{x}{14} = 500 \implies x = ₹7000$ Then, **53.** (c) Suppose number of boys =b
- 1st boy dances with 5 girls (1 + 4 = 5)2nd boy dances with 6 girls (2 + 4 = 6)3rd boy dances with 7 girls (3 + 4 = 7): bth boy dances with (b + 4) girls Hence, $g = b + 4 \implies b = g - 4$ 54. (a) Five years ago total age of husband and wife $= 22 \times 2 = 44$ yr Present age of husband and wife = $44 + 2 \times 5$ = 44 + 10 = 54 yr

:. Total age of the family =
$$54 + 3 = 57$$
 yr
Hence, average age of the family = $\frac{57}{3} = 19$ yr

55. (c) Availability of observable evidences will be acceptable for establishing a fact.

Solutions [Q. Nos. 56 to 59]

- From the given information, we can definitely say that Bs presentation will be immediately before C's presentation and their presentation together will be either pre lunch or post lunch. D is either first or last scientist to present his paper.
- 56. (d) If C is fifth scientist to present his paper, then B must be fourth to present his paper because B's presentation will be immediately before C's presentation.
- 57. (b) We know that B and C scientists presentation cannot be separated by the lunch break, in this case B could be placed in third order of presenters.
- 58. (d) From the given information, we can say that, D is the first scientist and F is the second scientist, then C can be present in only either fifth or sixth place. As B and C have to present in two consecutive position either pre lunch or post lunch.
- 59. (c) If F and E are fifth and sixth scientists, then D will be the first scientist, B and C will be the second and third presenters Hence, A is the fourth presenter.

Solutions [Q. Nos. 60 to 63]

Persons	Occupation	Male/Female	Relationship	
Grandmother	Lawyer	Female	Reena's mother-in-law	
Mukesh	Teacher	Male		
Rakesh	Teacher	Male		
Reena	Lawyer	Female	Rakesh's wife	
Ajay		Male	Mukesh's 50	
Mukesh's wife	Doctor	Female		

810-9977-628, 95160-01679, 99817-28109



ACME's Hall of Fame 2022



We have given over 700+ selections...



Scan to Download

ACME's app



Scan to Subscribe **ACME's youtube Channel**



Scan to Chat with us!!!



Instagram.com/acmeacademy.in



Facebook.com/acmeacademy

Visit our website www.acmeacademy.in

Type your E-mail contact@acmeacademy.in

Talk to us +91-81099-77628 +91-95160-01679