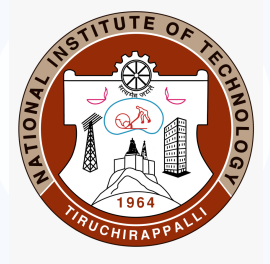


NIMCET 2026 June 6

Question Paper

Conducted by NIT TRICHY



General Instructions

- (i) The examination will be conducted in Computer-Based Test (CBT) mode.
- (ii) Each question carries +4 marks for a correct answer and -1 mark for a wrong answer.
- (iii) The total number of questions is 120.
- (iv) Duration of the exam is 2 hours (120 minutes).

MATHEMATICS

1. Arithmetic mean of two numbers a and b is 5 and the harmonic mean is 3.2. Find the numbers a and b ?

- (A) $a = 3, b = 7$
- (B) $a = 4, b = 6$
- (C) $a = 1, b = 9$
- (D) $a = 2, b = 8$

2. The value of $\cos^{-1}\left(\cos\left(-\frac{\pi}{6}\right)\right) + \sin^{-1}\left(\sin\left(\frac{5\pi}{6}\right)\right)$ is:

- (A) $\frac{2\pi}{3}$
- (B) $\frac{\pi}{3}$
- (C) $\frac{5\pi}{3}$
- (D) Not Defined

3. Let A_k be the arithmetic mean of the squares of k natural numbers.

$$\sum_{k=1}^n (6A_k - 3k) = 31$$

Find the value of n :

- (A) 3
 - (B) 2
 - (C) 4
 - (D) 1
-

4. Find the value of

$$\lim_{x \rightarrow 0} \frac{x^2 + 2 \cos x - 2}{x \sin 3x}$$

- (A) $\frac{1}{2}$
 - (B) $\frac{1}{3}$
 - (C) $\frac{1}{6}$
 - (D) $\frac{1}{12}$
-

5. Given

$$\cos 6x = (a) \cos^6 x + (b) \cos^4 x + (c) \cos^2 x + (d)$$

for any real number x , where a, b, c, d are constants. Find the value of $a + b + c$.

- (A) 7
 - (B) 2
 - (C) 49
 - (D) 13
-

6. Find the area of the triangle in the right half plane formed by the lines $x - y = 0$ and $x + y = 0$, and which is tangent to the hyperbola

$$x^2 - y^2 = a^2.$$

- (A) $4a^2$
- (B) $2a^2$

(C) a^2

(D) $\frac{a^2}{2}$

7. Evaluate

$$\int_0^{\frac{\pi}{4}} \frac{dx}{\cos^4 x}.$$

(A) 1

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

(C) $\frac{1}{3}$

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

8. A die is rolled twice independently. Probability that either first die shows number no less than 4 or second die shows at least 4?

(A) $\frac{1}{2}$

(B) $\frac{5}{6}$

(C) $\frac{2}{3}$

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

9. If $f : [0, \infty) \rightarrow \mathbb{R}$,

$$f(x) = \frac{x^2 - 1}{x^2 + 1},$$

then find

$$\int_{-1}^1 f^{-1}(y) dy.$$

(A) π

(B) 2π

(C) 0

(D) $\frac{\pi}{2}$

10. A triangle has a vertex at $(1, 2)$ and the midpoints of two sides through it are $(-1, 1)$ and $(2, 3)$. Find its area.

(A) 1

(B) 2

(C) 3

(D) 4

11. The eccentricity of ellipse whose centre at origin is $\frac{1}{2}$. If one of its directrices is $x = -4$, then equation of normal to it at $(1, \frac{3}{2})$ is:

(A) $4x + 2y = 7$

(B) $6x - 3y = \frac{3}{2}$

(C) $6x + 3y = \frac{21}{2}$

(D) $4x - 2y = 1$

12. If x, y are real numbers such that

$$2^{x+\frac{1}{2}} \times 4^{y-\frac{5}{6}} = 3^{x-\frac{1}{2}} \times 9^{y-\frac{1}{3}},$$

then which of the following is true?

(A) $6x - 12y - 7 = 0$

(B) $6x + 12y - 7 = 0$

(C) $6x + 12y + 7 = 0$

(D) $6x - 12y + 7 = 0$

13. From top of view point at height of 80 m, the angles of depression of the top and bottom of a flag standing on the same plane are observed to be 30° and 45° . Find the height of the flag.

(A) $40\sqrt{3}$

(B) $\frac{80}{\sqrt{3}}$

(C) $80\left(1 - \frac{1}{\sqrt{3}}\right)$

(D) $80(\sqrt{3} - 1)$

14. Let a, b, c be non-zero number such that $a + b + c \neq 0$ and $4a - 2b + c \neq 0$. If α and β are the roots of quadratic equation $ax^2 + bx + c = 0$, then which of the following equation has roots $\frac{\alpha + 2}{\alpha - 1}$ and $\frac{\beta + 2}{\beta - 1}$?

(A) $(a + b + c)x^2 - (4a - 2b + c)x + (4a + b - 2c) = 0$

(B) $(a + b + c)x^2 + (4a + 2b - c)x + (4a - 2b + c) = 0$

(C) $(a + b + c)x^2 - (4a + b - 2c)x + (4a - 2b + c) = 0$

(D) $(a + b + c)x^2 + (4a - 2b + c)x + (4a + b - 2c) = 0$

15. Find the value of determinant at $x = 2026$:

$$\begin{vmatrix} x & x+1 & x+3 \\ x+1 & x+3 & x+6 \\ x+3 & x+6 & x+10 \end{vmatrix}$$

(A) 2026

(B) -1

(C) 0

(D) 1

16. Number of triplets of sets (A, B, C) with $A, B, C \subseteq \{1, 2, 3, \dots, n\}$ such that

$$(A \cap B) \subseteq C \subseteq (A \cup B)$$

is:

(A) 7^n

(B) 6^n

(C) 8^n

(D) 5^n

17. Find the value of

$$\lim_{x \rightarrow \infty} \frac{\sqrt{x}}{\sqrt{x + \sqrt{x + \sqrt{x}}}}$$

(A) 0

(B) $\sqrt{2}$

(C) 1

(D) $\sqrt{3}$

18. Let $f : [0, \infty) \rightarrow \mathbb{R}$ be defined by

$$f(x) = \frac{3x^2 + 4x + 1}{x^2 + 3x + 2}.$$

Then the value of $(f^{-1})'(2)$ is:

- (A) 15
- (B) 5
- (C) 0
- (D) 25

19. Let $f : \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = |x + 1|e^{-x^2}$, then which of the following option is true?

- (A) f has point of maxima in $(-2, -1)$
- (B) f has point of global maxima in $(1, 2)$
- (C) f has point of local minima in $(0, 1)$
- (D) f has point of global minima in $(0, 1)$

20. If

$$f(x) = \begin{cases} 1, & |x| \leq 1 \\ 0, & |x| > 1 \end{cases}$$

$$g(x) = \begin{cases} 2 - x^2, & |x| \leq 2 \\ 2, & |x| > 2 \end{cases}$$

and $h(x) = f(g(x))$, then the interval in which $h(x) = 1$ for all values of x is:

- (A) $|x| \leq \sqrt{2}$
- (B) $|x| \leq \sqrt{3}$
- (C) $\frac{1}{2} \leq |x| \leq \sqrt{3}$
- (D) $1 \leq |x| \leq \sqrt{3}$

21. The number of values of θ in $[0, 2\pi]$ for which the following homogeneous system has a non-trivial solution is:

$$x + (\sin \theta)y + (\cos \theta)z = 0$$

$$x + (\cos \theta)y + (\sin \theta)z = 0$$

$$x - (\sin \theta)y - (\cos \theta)z = 0$$

- (A) 0
- (B) 2
- (C) 6
- (D) 4

22. Let $R \subset \mathbb{N} \times \mathbb{N}$. Which of the following statements is necessarily true?

- (A) If for all $a \in \mathbb{N}$, the set R_a is infinite then cardinality of R is larger than that of R_a
- (B) If for each $a \in \mathbb{N}$, the set $R_a = \{b \in \mathbb{N} : (a, b) \in R\}$ has cardinality at most 1, then R represents a function $f : \mathbb{N} \rightarrow \mathbb{N}$
- (C) If for some $a \in \mathbb{N}$, the set R_a is infinite then R_a and R have same cardinality
- (D) If for each $b \in \mathbb{N}$, the set $R_b = \{a \in \mathbb{N} : (a, b) \in R\}$ has cardinality at most 1, then R represents a function

23. The number of ordered tuples (p, q, r) in truth table for which the statement $(\neg p \vee q) \Rightarrow r$ is true is:

- (A) 3
- (B) 4
- (C) 2
- (D) 5

24. If

$$\tan^{-1}(3x) + \tan^{-1}(2x) = \frac{\pi}{4},$$

then find the value of x :

- (A) 2
- (B) 1
- (C) $x = \frac{1}{6}$
- (D) 0

25. If x, y, z satisfy

$$x + y + z = 1,$$

$$4x + 9y + 16z = 25,$$

$$16x + 18y + 256z = 625,$$

find the value of x :

(A) $x = \frac{15}{36}$

(B) $x = -\frac{15}{36}$

(C) $x = \frac{36}{15}$

(D) $x = -\frac{36}{15}$

26. In a tuition batch of 2 students, the probability that X will pass the examination is $\frac{2}{5}$ and that of Y is $\frac{3}{4}$. Assuming independence, what is the probability that neither X nor Y will pass?

(A) $\frac{1}{5}$

(B) $\frac{1}{10}$

(C) $\frac{3}{20}$

(D) $\frac{3}{10}$

27. Find the acute angle at which curves

$$y = (x - 2)^2$$

and

$$y = -4 + 6x - x^2$$

intersect.

(A) $\tan^{-1} \frac{5}{7}$

(B) $\tan^{-1} \frac{6}{7}$

(C) $\tan^{-1} \frac{4}{7}$

(D) $\frac{\pi}{4}$

28. Find the value of n if

$$\left(\sum_{k=1}^n (-1)^{k-1} k \right)^2 - \sum_{k=1}^n (-1)^{k-1} k^2 + 2450 = 0.$$

- (A) 101
 - (B) 100
 - (C) 98
 - (D) 93
-

29. Let A_1, A_2, A_3 be events in a sample space with $A_1 \cap A_2 \neq \phi$. Then always:

- (A) $P(A_1 \cap A_2 \cap A_3) = P(A_1)P(A_1/A_2)P(A_1/(A_2 \cap A_3))$
 - (B) $P(A_1 \cap A_2 \cap A_3) = P(A_1)P(A_2/A_1)P(A_3/(A_1 \cap A_2))$
 - (C) $P(A_1 \cap A_2 \cap A_3) = P(A_1)P(A_3/A_2)$
 - (D) $P(A_1 \cap A_2 \cap A_3) = P(A_1)P(A_2/A_3)$
-

30. Segments of lines

$$2x + 3y = 1$$

and

$$4x - 3y = 11$$

are diameters of a circle of area 153.94 square units. Then the equation of circle with integer radius is:

- (A) $x^2 + y^2 + 4x - 2y - 44 = 0$
 - (B) $x^2 + y^2 - 4x + 2y + 44 = 0$
 - (C) $x^2 + y^2 - 4x + 2y - 44 = 0$
 - (D) $x^2 + y^2 + 4x - 2y + 44 = 0$
-

31. Let X and Y be two independent identically distributed Bernoulli random variables with

$$P(X = 1) = \frac{1}{2}, \quad P(X = 0) = \frac{1}{2}.$$

If $Z = XY$, then distribution of Z is:

- (A) $P(Z = 1) = \frac{2}{3}, P(Z = 0) = \frac{1}{3}$

- (B) $P(Z = 1) = \frac{1}{2}, P(Z = 0) = \frac{1}{2}$
 (C) $P(Z = 1) = \frac{1}{4}, P(Z = 0) = \frac{3}{4}$
 (D) $P(Z = 1) = \frac{1}{3}, P(Z = 0) = \frac{2}{3}$
-

32. Given observations

10, 4, 11, 6, 17, 15, 9, 8, x

and mean = mode = median. Find the value of x .

- (A) 12
 (B) 10
 (C) 9
 (D) 11
-

33. Find Mode

Class Interval	No. of Students.
20-25	8
25-30	14
30-35	20
35-40	18
40-45	10
45-50	6

- (A) 34.12
 (B) 33.75
 (C) 31.67
 (D) 32.14
-

34. $BC = a, AC = b, AB = c$ are sides of $\triangle ABC$ and $\angle C \neq \frac{\pi}{2}$. Which of the following is not correct?

- (A) $\frac{a-b}{a+b} = \cot\left(\frac{A+B}{2}\right) \tan\left(\frac{A-B}{2}\right)$
 (B) $\frac{a-b}{a+b} = \frac{\tan\left(\frac{A-B}{2}\right)}{\tan\left(\frac{C}{2}\right)}$
 (C) $\frac{a-b}{a+b} = \frac{\sin A - \sin B}{\sin A + \sin B}$
-

(D) $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

35. Which of the following is not same as $(A \Delta B) \cap C$?

- (A) $(A \cap C) \Delta (B \cap C)$
(B) $(A \cap B \cap C)^c \cap ((A \cup B) \cap C)$
(C) $((A \cap B^c) \cap C) \cup ((B \cap A^c) \cap C)$
(D) $(A \cap B)^c \cap C$
-

36. The distance (in meter) for 7 throws of a shotputter are 14.5, 15.2, 16.8, 17.1, 15.9, 16.3, 14.7. Calculate sample mean and sample standard deviation.

- (A) 14.79, 0.88
(B) 15.79, 1.02
(C) 14.79, 1.15
(D) 15.79, 0.96
-

37. Which of the following equation represents common tangent to parabola $y = -x^2$ and $y = (x - 2)^2$?

- (A) $y = -5x + \frac{25}{4}$
(B) $y = -4x + 4$
(C) $y = 4x + 4$
(D) $y = 5x + \frac{25}{4}$
-

38.

$$\lim_{x \rightarrow 0} \frac{|x| \log_e(1 + |\sin 2x|)}{x^2(|x| + 3)}$$

- (A) Does not exist
(B) Exists and equals $\frac{2}{3}$
(C) Exists and equals $\frac{1}{3}$
(D) Exists and equals 0
-

39. Consider graph of function $f(x) = 2 \cos\left(\frac{x}{2}\right) + 3$, $g(x) = 4$. The number of points of intersection of two graphs in interval $[0, 4\pi]$ is:

- (A) 1
 - (B) 3
 - (C) 2
 - (D) 4
-

40. Let $x - y \tan 35^\circ = \tan 25^\circ (y + x \tan 35^\circ)$ for some $x, y \in \mathbb{R}$. Then which of the following is true?

- (A) $x < y$
 - (B) $x > y$
 - (C) No such x, y exists
 - (D) $x = y$
-

41. x, y, z are positive real numbers such that

$$\sqrt{x+y} - 3\sqrt{y+z} = 2$$

and

$$4x - 5y - 9z = 8.$$

Find

$$\sqrt{\frac{20x + 38y + 18z + 1}{9z + 9y + 2}}.$$

- (A) 3
 - (B) 4
 - (C) 5
 - (D) 6
-

42. An engineer standing at point P wishes to determine the width of a rectangular pond. She finds distance to westernmost point A to be 60 m and distance to northernmost point B to be 80 m. If angle $APB = 60^\circ$, find AB .

- (A) $13\sqrt{20}$
 - (B) $13\sqrt{10}$
-

- (C) $20\sqrt{13}$
(D) $10\sqrt{13}$
-

43. For a given sample the computed values of variance and fourth central moment are 3 and 63 respectively. Then underlying frequency distribution is classified as:

- (A) Leptokurtic
(B) Mesokurtic
(C) Platykurtic
(D) Normal
-

44. Coefficient of x^{10} in the expansion of

$$\left(x^2 + \frac{1}{x}\right)^{12} + \left(x + \frac{1}{x^2}\right)^{12}$$

is:

- (A) 12
(B) 66
(C) 112
(D) 0
-

45. Let $(x_0, y_0) \in \mathbb{Z}^2$ be a point on straight line $8x - 3y = 11$ which is equidistant from coordinate axes. Then point (x_0, y_0) will lie only in:

- (A) II quadrant
(B) III quadrant
(C) I quadrant
(D) IV quadrant
-

46. Define relation $\sim$ on set $\{1, 2, \dots, 10\}$ by $a \sim b$ if $a - 2b$ is divisible by 3, then:

- (A) $\sim$ is transitive but neither symmetric nor reflexive
(B) $\sim$ is reflexive but neither symmetric nor transitive
(C) $\sim$ is symmetric but neither reflexive nor transitive
(D) $\sim$ is not symmetric, not reflexive, not transitive
-

47. For $a \in \mathbb{R}$, consider the real valued function defined on $(-1, 1)$:

$$f(x) = \begin{cases} \frac{(1+x)^{1/3} - (1+2x)^{1/4}}{x}, & x \neq 0, \\ a, & x = 0. \end{cases}$$

If f is differentiable at $x = 0$, then value of $a + f'(0)$ is:

- (A) $\frac{19}{72}$
 - (B) $\frac{7}{72}$
 - (C) $\frac{31}{72}$
 - (D) $-\frac{1}{6}$
-

COMPUTER

48. Consider the following statement about range of number in 9 bit 1's complement and 2's complement system.

- I. In 9 bits 1's complements the range is -255 to $+255$ and there exist two representations of zero.
- II. In 9 bits 2's complements the range is -256 to $+255$, both 1's complements and 2's complements can represent exactly 512 unique values.
- III. The maximum positive number representable is $+255$ in both 1's complements and 2's complements 9 bit system.

Options:

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

49. Which one of disadvantage of using dynamically linked library (DLL) compared to using statically linked library:

- (A) A program can not take advantage of bug fixes in DLL, long after the program written

- (B) Executable file size is larger with DLL
 - (C) None of other option
 - (D) RAM usage is larger with DLL
-

50. Which about fetch decode execute cycle in CPU are correct?

- I. Program counter is incremented after each instruction is fetched so the CPU move to the next instruction.**
- II. The Control Unit is responsible for fetching instruction and placing them in the instruction register.**
- III. The ALU is responsible for decoding instruction and determining which operation to perform.**
- IV. Register are used to permanently store operating system's files for fast access.**

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

51. When navigating to website your computer send a request to server. If the server's IP address is not known which system is responsible for translating the human readable URL into machine readable IP address?

- (A) HTTP
 - (B) SSD
 - (C) DNS
 - (D) SMTP
-

52. Binary multiplication of 1100 and 1011:

- (A) 10000100
 - (B) 10000110
 - (C) 10001000
 - (D) 11111100
-

53. Which component of web browser is responsible for taking HTML, CSS, JavaScript code and turning it into visual page you interact with?

- (A) Rendering Engine
 - (B) Transport Layer Security protocol
 - (C) Javascript Engine
 - (D) Network Protocol Stack
-

54. The decimal equivalent 8-bit two's complement number 11010011:

- (A) -211
 - (B) -45
 - (C) -44
 - (D) +211
-

55. The order of memory increasing access speed:

- (A) RAM → HD → Cache → CPU Register
 - (B) Cache → RAM → CPU Register → HD
 - (C) HD → Cache → RAM → CPU Register
 - (D) HD → RAM → Cache → CPU Register
-

56. Which protocol is used specifically by email client to read email from email server:

- (A) ICMP
 - (B) DNS
 - (C) SMTP
 - (D) IMAP
-

57. Cookies in context of web browsing:

- (A) Viruses that are used to steal user's sensitive data
 - (B) The list of all website that user has visited in previous browsing.
 - (C) Small text file store on the user's computer to save site preferences.
 - (D) Deleting all your cookies will wipe your browser's history and permanently delete your email drafts.
-

58. In standard machine language instruction which component identifies the specific operation to be performed such as addition or data movement:

- (A) Register
 - (B) Opcode
 - (C) Operand
 - (D) Immediate Address
-

Reasoning

59. Trains pass through Park Street station at regular intervals of 45 minutes. A man is standing at the station. He knows that the previous train passed 15 minutes ago, and the next train will arrive at 9:45 AM. What is the current time?

- (A) 9:00 AM
 - (B) 9:15 AM
 - (C) 9:30 AM
 - (D) 9:45 AM
-

60. Find the next term in the following sequence:

28, 327, 464, 5125, ?

- (A) 6125
 - (B) 6216
 - (C) 7216
 - (D) 6126
-

61. Suresh first travels 18 km towards the West. He then turns left and travels 14 km. After that, he turns right and travels 11 km. He again turns right and travels 7 km. Then he turns left and travels 16 km. Finally, he turns right and travels 9 km, where he stops. What is the final direction in which Suresh is moving when he stops?

- (A) North
 - (B) East
-

- (C) South
(D) West
-

62. Find the missing number (?) in the following pattern:

4	5	3	2	0
7	3	4	4	21
6	4	4	5	22
9	6	5	5	?

- (A) 44
(B) 42
(C) 34
(D) 45
-

63. In a family of seven members, namely P1, P2, P3, P4, P5, P6, and P7, the following information is known:

- P4 is the sister of P7.
- P2 is the mother of P6's wife.
- P6 is the son-in-law of P3.
- P5 and P7 are the grandsons of P3.
- In the family, there are exactly: 2 fathers, 2 mothers, 2 brothers, 1 sister.

Based on the above information, what is the relationship between P1 and P4?

- (A) Brother and Sister
(B) Mother and Daughter
(C) Husband and Wife
(D) Father and Son
-

64. Study the following statements and conclusions carefully.

Statements:

Some Professors are Doctors.

All Doctors are Patients.

Conclusions:

I. Some Professors are Patients.

II. No Doctor is a Professor.

(A) Only Conclusion I follows.

(B) Only Conclusion II follows.

(C) Both Conclusions I and II follow.

(D) Neither Conclusion I nor II follows.

65. Study the following statements and conclusions carefully.

Statements:

- All Polymers are Cakes.
- Some Plastics are not Cakes.
- All Plastics are Synthetic Fibers.

Conclusions:

I. Some Synthetic Fibers are not Cakes.

II. Some Cakes are Synthetic Fibers.

III. No Polymer is a Plastic.

IV. Some Polymers are Synthetic Fibers.

Options:

(A) Only I and III follow.

(B) Only I follows.

(C) Only I, II and III follow.

(D) Only I and IV follow.

66. In a survey, 70% of cat owners also own a dog, while only 20% of dog owners also own a cat. If there are 1001 dog owners, how many cat owners are there?

- (A) 453
 - (B) 254
 - (C) 771
 - (D) 286
-

67. Five years ago, A's age was three times B's age. At present, A's age is twice B's age. What is A's present age?

- (A) 20 years
 - (B) 25 years
 - (C) 30 years
 - (D) 35 years
-

68. The sum of x , y , and z is 98. The ratio of $x : y = 2 : 3$, and the ratio of $y : z = 5 : 8$. What is the value of y ?

- (A) 30
 - (B) 20
 - (C) 48
 - (D) 58
-

69. Study the following statements and conclusions carefully.

Statements:

- All Z are Y.
- No Y is X.
- Every X is W.

Conclusions:

- I. Some W are Z.
- II. Z are not X.

Options:

- (A) Only Conclusion I follows.
 - (B) Only Conclusion II follows.
 - (C) Both Conclusions I and II follow.
 - (D) Neither Conclusion I nor II follows.
-

70. In a group of people:

- 70 play only Hockey.
- 100 play only Football.
- 30 play both Hockey and Football.
- 150 play neither game.

What percentage of the people play Hockey?

- (A) 28.57%
 - (B) 46.6%
 - (C) 66.6%
 - (D) 20%
-

71. The price of LPG increases by 16%. By what percentage should consumption be reduced so that the total expenditure remains the same?

- (A) 13.79%
 - (B) 16.67%
 - (C) 13.30%
 - (D) 15.26%
-

72. Five persons P, Q, R, S, and T are standing one above another in a vertical line.

- Q is above R.
- R is above S.
- T is at the bottom.

- P is directly above T.
- S is above P

Who is at the top?

- (A) P
- (B) Q
- (C) R
- (D) S

73. U, V, W, X, Y, Z are standing in line. Y is in between V and Z, W is immediate left of V. X is not on either ends. U is right of Z. If W is far left then who is at 4th position from left?

- (A) U or V
- (B) X or Y
- (C) V or W
- (D) W or Z

74. Kritika has three solid objects cone, hemisphere, cylinder. All have same base radius and height. Then the ratio of volume of cylinder : cone : hemisphere is

- (A) 1 : 2 : 3
- (B) 1 : 1 : 1
- (C) 3 : 1 : 2
- (D) 2 : 1 : 3

75. Statement: Indian Child are very talented but are instead weak in Science and Mathematics.

Course of Action:

- I. Teaching and Text book are not available in mother language.
- II. Education based on experiment in both subject is lacking.

Options:

- (A) Only II follows
- (B) Only I follows

- (C) Neither I nor II follows
(D) Either I or II follows
-

76. 72, 69, 66, ... Number continue in same pattern as long as they remain positive. What will be the maximum sum of terms?

- (A) 903
(B) 897
(C) 900
(D) 882
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77. Ten people went out for dinner. Nine of them contributed 400 each, while the tenth person contributed an amount that was 900 more than the average contribution of the entire group. How much did the tenth person contribute?

- (A) 1000
(B) 1200
(C) 1300
(D) 1400
-

78. The sum of four numbers A, B, C, and D is 10,600. Without A, the average of B, C, and D is 1,000. Without B, the average of A, C, and D is 3,220. Without C, the average of A, B, and D is 3,180. Find the value of D.

- (A) 880
(B) 7600
(C) 1000
(D) 1120
-

79. The sum of X, Y, W, and Z is 84. The sum of Y, W, and Z is three times X. The sum of X, W, and Z is 320% of Y. W is 20% of the sum of X, Y, and Z. Find the value of Z.

- (A) 29
(B) 42
(C) 32
(D) 40
-

80. In a certain code language, INDIA → JLGEF. Then how will ROME be written in that code language?

- (A) SMPA
 - (B) SNPA
 - (C) TMQA
 - (D) SLPB
-

81. In a certain code language, FALSE is written as 6, 1, 12, 19, 5 which represents the alphabetical positions of its letters. How will LOGIC be written in that code language?

- (A) 12, 15, 7, 9, 3
 - (B) 11, 15, 8, 9, 3
 - (C) 12, 16, 7, 8, 3
 - (D) 13, 15, 7, 9, 2
-

82. Arun pointed to a woman and said: "She is the daughter of my father's only son." What is the woman's relation to Arun?

- (A) Sister
 - (B) Daughter
 - (C) Cousin
 - (D) Mother
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83. Match the words in Column I with the most appropriate words in Column II.

Column I		Column II	
A.	Conduct	1.	A Theory
B.	Refute	2.	A Study
C.	Propose	3.	Data
D.	Analyze	4.	An Argument

- (A) A-2, B-4, C-1, D-3

- (B) A-1, B-2, C-4, D-3
 - (C) A-2, B-1, C-3, D-4
 - (D) A-3, B-4, C-2, D-1
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84. What is the synonym of Anthropogenic?

- (A) Natural
 - (B) Super-induced
 - (C) Human-induced
 - (D) Synthetic
-

85. Simplify the Boolean expression:

$$(x + y' + z')(x + y' + z)(x + y + z')$$

- (A) $x + y'z'$
 - (B) $x + yz$
 - (C) $x' + y'z'$
 - (D) $xy' + z'$
-

86. RAM consists of 16GB, there are 100 processes, each process is on an average of 100MB each. Will virtual RAM be necessary?

- (A) No, because the total memory required (approx. 10 GB) is less than the available 16 GB physical RAM.
 - (B) Yes, because the OS reserves 10GB by default, leaving insufficient space.
 - (C) Wrong Option 2: Yes, because 100 processes exceed the multitasking thread limit of physical RAM.
 - (D) No, because virtual RAM is exclusively used for hard disk storage space, not running processes.
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87. There are 2 circular disks which have 4 surfaces in total. There are 5000 tracks, 2000 each. How much will the Reader read without moving?

- (A) cylinder (or 4 tracks)
- (B) 20,000 tracks

- (C) 5,000 tracks
 - (D) 2 tracks
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88. Fetch - Decode - Execute cycle of CPU is called?

- (A) Instruction Cycle
 - (B) Data Pipelining Cycle
 - (C) Memory Allocation Cycle
 - (D) Interrupt Handling Cycle
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89. Which of the following is a difference between POP3 and IMAP?

- (A) POP3 downloads emails to one device and deletes them from the server, while IMAP syncs emails across devices and keeps them on the server.
 - (B) POP3 is used for sending emails, while IMAP is used strictly for receiving them.
 - (C) IMAP requires a continuous internet connection to read downloaded emails, whereas POP3 allows offline reading.
 - (D) POP3 encrypts messages by default, whereas IMAP sends messages in plain text format.
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