Code No.	T – 2126

Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2024

CSS

MATHEMATICS / MATHEMATICS WITH FINANCE AND COMPUTATION

General Instructions

1. The Question Paper is having 100 Objective Questions, each carrying one mark.
2. The answers are to be (✓) 'tick marked' **only** in the "**Response Sheet**" provided.
3. **Negative marking** : **0.25 marks** will be deducted for each wrong answer .

Time : 2 Hours **Max. Marks : 100**

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

Choose appropriate answer from the options in the questions.

($100 \times 1 = 100$ marks)

1. Let $f : \mathbb{R} \to \mathbb{R}$ defined by $f(x) = \min\{x, x+1, |x-2|\}$. Then

   A. f decreases on the interval $(-\infty, 1]$

   B. f is not continuous on $\mathbb{R}$

   C. f is not differentiable at exactly two points

   D. f increases on the interval [1, 2]

DO NOT WRITE HERE

---

2. Let $f:[0,1]\to\mathbb{R}$ be defined by $f(x)=\begin{cases}1 \ \mathit{if} \ \ x=1/4, \\ 2 \ \mathit{if} \ \ x=1/2 \\ 0 \ \mathit{if} \ \ x\in[0,1]\setminus\{1/2,1/4\}\end{cases}$

   A. f is Riemann integrable and $\int_0^1 f(x)dx=0$

   B. f is not Riemann integrable

   C. f is Riemann integrable and $\int_0^1 f(x)dx=2$

   D. f is Riemann integrable and $\int_0^1 f(x)dx=1$

3. Which one of the following does not imply $a = 0$?

A. for every $\in > 0, 0 \le a < \in$

B. for every $\in > 0$, $a < \in$

C. for every $\in > 0, 0 \le a \le \in$

D. for every $\in > 0, -\in < a < \in$

4. An algebraic number is a root of a polynomial whose coefficients are rational. The set of algebraic numbers is

A. uncountable

B. countably infinite

C. finite

D. none of these

5. The limit of the sequence $\left(\sqrt{(n+1)(n+2)} - n\right)$ is

A. 3

B. 3/2

C. 0

D. $\sqrt{2} - 1$

6. The sequence $\left(\dfrac{2^{n+1} + 3^{n+1}}{2^n + 3^n}\right)$ converges to

A. 0

B. 1

C. 3

D. 2

7. The value of the integral $\int_{-\infty}^{\infty} e^{-x^2} dx$ is

A. $\sqrt{\pi}$

B. $2\sqrt{\pi}$

C. 0

D. $\sqrt{\pi}/2$

8. If $\sum a_n = a$ and $\sum |a_n| = b$, and a and b are finite, then

A. $a = b$

B. $a \le b$

C. $|a| = b$

D. $a \ge b$

9. If $x_n = 1 + (-1)^n + \dfrac{1}{3^n}$, then

A. lim sup $x_n \ne$ lim inf x_n

B. lim inf $x_n = -1$

C. x_n is a convergent sequence

D. $\limsup x_n = 1$

10. Let (x_n) be a sequence defined by $x_1 = 2$ and $x_{n+1} = \frac{1}{2}\left(x_n + \frac{2}{x_n}\right)$. Then

A. (x_n) is an increasing sequence

B. (x_n) converges to $2\sqrt{2}$

C. (x_n) converges to a rational number

D. (x_n) is a decreasing sequence

11. For $x \in \mathbb{R}$, let $[x]$ denote the greatest integer n such that $n \le x$. The function $x[x]$ is

A. continuous everywhere

B. continuous if $x \in \mathbb{R} \setminus \mathbb{Z}$

C. continuous only at $x = \pm 1, \pm 2, \ldots$

D. bounded on $\mathbb{R}$

12. The subset $A = \{x \in \mathbb{Q} : -1 < x < 0\} \cup \mathbb{N}$ of $\mathbb{R}$ is

A. bounded, infinite set and has a limit point in $\mathbb{R}$

B. unbounded, infinite set and has a limit point in $\mathbb{R}$

C. unbounded, infinite set and does not have a limit point in $\mathbb{R}$

D. bounded, infinite set and does not have a limit point in $\mathbb{R}$

13. The sequence of real-valued functions $f_n(x) = x^n$, $x \in [0, 1] \cup \{2\}$, is

A. uniformly convergent

B. not bounded

C. pointwise convergent but not uniformly convergent

D. bounded but not pointwise convergent

14. The series $\sum_{n=1}^{\infty} \frac{(2n)!}{(n!)^2}$ is

A. converges to 1

B. converges to 1/2

C. converges to e

D. divergent

15. If (x_n) be a sequence such that $x_n \geq 0$ for every $n \in \mathbb{N}$ and if $\lim_{n\to\infty} (-1)^n x_n$ exists then which one of the following statements is true?

A. The sequence (x_n) is divergent

B. The sequence (x_n) is unbounded

C. The sequence (x_n) is not a Cauchy sequence

D. The sequence (x_n) is a Cauchy sequence

16. For the function $f(x) = \frac{\sin x}{x^2}$, how many points exist in the interval $[0, 7\pi]$ such that $f'(c) = 0$

A. 0

B. 8

C. 7

D. 6

17. The function $f(x) = x^4 - 6x^2$ is increasing on the intervals

A. $(-\infty, -\sqrt{3})$ and $(0, \sqrt{3})$ only

B. $(\sqrt{3}, \infty)$ only

C. $(0, \sqrt{3})$ only

D. $(-\sqrt{3}, 0)$ and $(\sqrt{3}, \infty)$ only

18. The value of the double integral $\int_0^1 \int_0^{x^2} e^{y/x}\, dx\, dy$ is

A. 0

B. 1/2

C. –1/2

D. e

19. The value of the triple integral $\int_0^{x/2}\int_0^{\sin\theta}\int_0^{r} r\,dr\,d\theta\,dz$ is

A. 1/4 B. 1/2

C. 0 D. –1

20. The area of the region in the first quadrant enclosed by the graphs of $x = y^2$ and $x = y + 2$ is

A. 9 B. 3/2

C. 9/2 D. 3

21. If C is the circle $x^2 + y^2 = 1$ taken in anticlockwise rotation, then the value of the integral $\int_C \left(x^{2024}y^{2025} + 2025y\right)dx + \left(x^{2025}y^{2024} + 2024x\right)dy$ is

A. π B. 2π

C. $\pi/2$ D. 0

22. Consider a closed surface S surrounding volume V. If $\vec{r}$ is the position vector of a point inside S, with the unit outward normal $\vec{n}$ on S, then the value of the integral $\iint_S 5\vec{r}\cdot\vec{n}\,dS$ is

A. $5V$ B. V

C. 0 D. $15V$

23. For what value of c does the line $\frac{x}{2} = \frac{y}{c} = \frac{z}{3}$ lie in the plane $x + 3y + 5z = 0$?

A. –13/3 B. 17/3

C. 13/3 D. –17/3

24. The surface $xyz + 2yz + x^2 2 = 19$ has a normal line T at $P = (1, 2, 3)$. Then T meets the $x - y$ plane at point Q which is

A. (8, 9, 6) B. (–3, –5/2, 0)

C. (6, 5, 0) D. (3, 5/2, 0)

25. Let $x(u,v)=ue^{u}+v$ and $y(u,v)=ve^{2u}$. Then the Jacobian $\dfrac{J(x,y)}{J(u,v)}$ at $u=1$, $v=0$ is

A. e B. $2e$

C. e^{2} D. $2e^{3}$

26. Consider the line integral $\int_C (2x+y)dx+(x+z)dy+(y-2z)dz$ where C is some curve joining the points A = (0, 0, 0) and B = (1, 5, 5). The value of the integral is

A. –18 B. 6

C. 56 D. 32

27. Let ***F*** denote a vector field and let *f* define a scalar function of three variables. Which of the following expressions is a meaningful expression?

A. div (div ***F***) B. grad (grad ***F***)

C. curl(curl ***F***) D. grad (grad *f*)

28. The equations of the lines joining the vertex of the parabola $y^{2}=6x$ to the points on it which have abscissa 24 are

A. $2y \pm x = 0$ B. $2x \pm y = 0$

C. $x \pm 2y = 0$ D. $y \pm x = 0$

29. Find the inverse Laplace transform of the function $\dfrac{3}{(s+1)^{3}}$

A. $(3/2)t^{2}e^{t}$ B. $3t^{2}e^{-t}$

C. $(3/2)t^{2}e^{-t}$ D. $t^{2}e^{-t}$

30. The center of the ring of 2×2 matrices over $\mathbb{R}$

A. $\left\{\begin{pmatrix} 0 & a \\ b & 0 \end{pmatrix} : a,b \in \mathbb{R}\right\}$ B. $\left\{\begin{pmatrix} 0 & a \\ a & 0 \end{pmatrix} : a \in \mathbb{R}\right\}$

C. $\left\{\begin{pmatrix} a & 0 \\ 0 & b \end{pmatrix} : a,b \in \mathbb{R}\right\}$ D. $\left\{\begin{pmatrix} a & 0 \\ 0 & a \end{pmatrix} : a \in \mathbb{R}\right\}$

31. The set of units of the Gaussian ring $z[i] = \{a + ib : a, b \in \mathbb{Z}\}$ is

A. $i\,\mathbb{Z}$

B. $\mathbb{Z}$

C. $\mathbb{Z} \cup i\,\mathbb{Z}$

D. $\{\pm 1, \pm i\}$

32. Group of automorphisms of $\mathbb{Z}_{10}$ is isomorphic to

A. $\mathbb{Z}_2 \times \mathbb{Z}_2$

B. $\mathbb{Z}_4$

C. $\mathbb{Z}_{10}$

D. $\mathbb{Z}_2$

33. The system of equations $6x_1 - 2x_2 + 2\alpha x_3 = 1$ and $3x_1 - x_2 + x_3 = 5$ has no solution if α is equal to

A. 1

B. –5

C. 5

D. –1

34. Let G be a group of order 6. Then

A. G is abelian but not cyclic

B. G is cyclic

C. there is not sufficient information to determine G

D. G has 2 possibilities (upto isomorphism)

35. The number of group homomorphisms from $\mathbb{Z}_{12}$ to $\mathbb{Z}_{13}$ is

A. 0

B. 1

C. 2

D. 3

36. Let G be a group and H be a subgroup of G. Which of the following statements is true?

A. If H is a normal subgroup of G then $gH = Hg$ for all $g \in G$

B. If H is a normal subgroup of G then $gH \neq Hg$ for all $g \in G$

C. If $gH \neq Hg$, for some $g \in G$ then H is a normal subgroup of G

D. If $gH = Hg$, for some $g \in G$ then H is a normal subgroup of G

37. Which of the following statements are true?

A. every group of order 4 is cyclic

B. every group of order 6 is abelian

C. every subgroup of *a* cyclic group is cyclic

D. every group of order 6 is cyclic

38. The smallest non abelian group is

A. S_3 B. Klein 4 group

C. D_4 D. $\mathbb{Z}_4$

39. In the Klien 4 group

A. order of every element except identity is 2

B. order of every element is 2

C. order of every element except identity is 3

D. order of every element except identity is 4

40. The infinite cyclic group $\mathbb{Z}$ has exactly

A. five generators B. two generators

C. one generator D. three generators

41. The number group homomorphisms from $\mathbb{Z}_{25} \to \mathbb{Z}$ is

A. 2 B. 3

C. 4 D. 1

42. The number of ring homomorphisms from $\mathbb{Z}$ to $\mathbb{Z}$ is

A. 2 B. 0

C. 1 D. infinite

43. In a division ring there are exactly

A. only one idempotent B. two idempotents

C. four idempotents D. three idempotents

44. If p is a prime number, $x^p + a$ is irreducible over $\mathbb{Z}_p[x]$

A. for some values of $a \in \mathbb{Z}_p$

B. exactly two values of $a \in \mathbb{Z}_p$

C. exactly one value of $a \in \mathbb{Z}_p$

D. for all $a \in \mathbb{Z}_p$

45. The polynomial $f(x) = x^2 + 8x - 2$ is

A. irreducible over $\mathbb{Q}$

B. irreducible over $\mathbb{R}$

C. reducible over $\mathbb{R}$

D. irreducible over $\mathbb{Q}$ and $\mathbb{R}$

46. Which of the following statements are true?

A. {0, 2, 4} is a prime but not a maximal ideal of $\mathbb{Z}_6$

B. {0, 2, 4} is not an ideal of $\mathbb{Z}_6$

C. {0, 2, 4} is a prime and a maximal ideal of $\mathbb{Z}_6$

D. {0, 2, 4} is not a prime but a maximal ideal of $\mathbb{Z}_6$

47. $\dfrac{\mathbb{Z}_3[x]}{\langle x^3 + c \rangle}$ is not a field if

A. $c = 2$

B. $c = 3$

C. $c = 1$

D. $c = 0$

48. The number of diagonal 3×3 complex matrices A such that $A^3 = I$ is

A. 9

B. 27

C. 3

D. 1

49. Let $T : \mathbb{R}^3 \to \mathbb{R}^3$ be the linear transformation defined by $T(x_1, x_2, x_3) = (x_1 + x_2, x_2 + x_3, x_3 + x_1)$. Then an eigenvalue of T is

A. 0

B. 3

C. 4

D. 2

50. The solutions $x^2y'' + xy' + 4y = 0$ are

A. $\cos(4\log x), \sin(4\log x)$

B. $\cos(\log x), \sin(\log x)$

C. $\cos(2\log x), \sin(2\log x)$

D. $\cos(\log x), \sin(2\log x)$

51. An integrating factor of the differential equation $(y^2x - x^2y)dx + x^3dy = 0$ is

A. (xy)

B. $(xy)^{-2}$

C. $(xy)^{-1}$

D. $(xy)^{-3}$

52. The derivative of the function $y = \sin^{-1}\left(\sqrt{\frac{x-1}{x+1}}\right) + \sec^{-1}\left(\sqrt{\frac{x+1}{x-1}}\right)$ is

A. 2

B. 1

C. 3

D. 0

53. The distinct eigenvnlues of the matrix $\begin{pmatrix} 1 & 1 & 0 \\ 1 & 1 & 0 \\ 0 & 0 & 0 \end{pmatrix}$ are

A. 0, –1

B. 1, 2

C. 0, 1

D. 0, 2

54. If –1, 2,3 are the eigenvalues of a 3×3 matrix, then its determinant is

A. 0

B. 4

C. –6

D. 6

55. The dimension of the vector space $\mathbb{R}$ over $\mathbb{Q}$ is

A. 0

B. infinite

C. 1

D. 2

56. Consider the following subsets of the vector space $\mathbb{R}^2$:

$S1: \{(x, y): x + y \geq 0\}$

$S2: \{(x, y): x^2 + y^2 \geq 1\}$

Which of the following statements are true?

A. $S1$ is not a subspace but $S2$ is a subspace

B. neither $S1$ nor $S2$ is a subspace of $\mathbb{R}^2$

C. $S1$ is a subspace but $S2$ is not a subspace

D. both $S1$ and $S2$ are subspaces of $\mathbb{R}^2$

57. If V_1 and V_2 are 3-dimensional subspaces of *a* 4 dimensional vector space V, then the smallest possible dimension of $V_1 \cap V_2$ is

A. 3 B. 1

C. 2 D. 4

58. Let W be the vector space of all symmetric matrices over $\mathbb{R}$. Then the dimension of W is

A. 3 B. 1

C. 2 D. 0

59. The 10×10 matrix with all entries 1 have rank

A. 10 B. 0

C. 1 D. 2

60. A consistent linear system of two equations in two unknowns has

A. Exactly one solution

B. Infinitely many solutions

C. Exactly one solution or an infinite number of solutions

D. Exactly two solutions

61. Let $A = \begin{pmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{pmatrix}$ be such that A has real eigenvalues. Then

A. $\theta = 0, \frac{-\pi}{2}$

B. $\theta = 0, \frac{-3\pi}{2}$

C. $\theta = 0, \pi$

D. $\theta = 0, \frac{\pi}{2}$

62. A homogeneous system of 5 linear equations in 6 variables admits

A. Finite, but more than 2 solutions in $\mathbb{R}^6$

B. No solution in $\mathbb{R}^6$

C. Infinitely many solutions in $\mathbb{R}^6$

D. A unique solution in $\mathbb{R}^6$

63. Suppose the matrix $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ has an eigenvalue 1 with associated eigenvector $x = \begin{bmatrix} 2 \\ 3 \end{bmatrix}$. What is $A^{50}x$?

A. $\begin{bmatrix} 2 \\ 3 \end{bmatrix}$

B. $\begin{bmatrix} 2^{50} \\ 3^{50} \end{bmatrix}$

C. $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$

D. $\begin{bmatrix} a^{50} & b^{50} \\ c^{50} & d^{50} \end{bmatrix}$

64. Given that a 3 $\times$ 3 matrix satisfies the equation $A^3 - A^2 + A - I = 0$. Then the value of A^4 is

A. $-A^3 - A^2 + A - I = 0$

B. $A^3 + A^2 + A - I = 0$

C. Not computable from the given data

D. I

65. If A and B are square matrices of the same order, then $tr\,(AB) =$

A. $tr\,(B)\,tr\,(A)$

B. $tr\,(B) + tr\,(A)$

C. $tr\,(BA)$

D. $tr\,(B + A)$

66. The differential equation $2y\,dx - (3y - 2x)dy = 0$ is

A. Not exact and homogeneous but not linear

B. Exact and non-homogeneous but not linear

C. Exact and homogeneous but linear

D. Is exact and homogeneous but not linear

67. Consider the 2nd-order linear equation with constant coefficients : $y'' + ay' + y = 0$
If r_1 and r_2 are the roots of its characteristic equation, then what is $r_1^2 + r_2^2$?

A. $a^2 - 2b$

B. $a^2 - 4b$

C. $a^2 + 2b$

D. $a^2 + 4b$

68. Consider the differential equation : $y'' + y = 0$. Which of the following is not a solution?

A. $\cos x$

B. $\tan x$

C. $\sin x$

D. $\cos(x + 1)$

69. The order of a differential equation whose general solution is $y = A\sin x + B\cos x$, where A and B are arbitrary constants is

A. 1

B. 2

C. 3

D. 4

70. An integrating factor of the differential equation $\frac{dy}{dx} = \frac{1}{x + y + 2}$ is

A. e^{y}

B. e^{-x}

C. e^{-y}

D. e^{x}

71. For which value of k is the differential equation $(x^k + y^k)dx + 2xy\,dy = 0$ is homogeneous.

A. $k = 1$

B. $k = 0$

C. $k = 2$

D. $k = \frac{1}{2}$

72. If the vector function $V=(x+3y)i+(y-2z)j+(x+az)$ is solenoidal then the value of a is

A. 0
B. 2
C. –2
D. 1

73. The scalar potential of the conservative vector field $F=(y+\sin z)i+x\,j+x\cos z\,k$ is

A. xy
B. $xy+\sin z$
C. $x+\sin z$
D. $\sin z$

74. If $\frac{du}{dt}=w\times u$, $\frac{dv}{dt}=w\times v$, then $\frac{d}{dt}(u\times v)$

A. $w\times(u\times v)$
B. 0
C. $u\times(w\times v)$
D. $v\times(u\times w)$

75. The value of the integral $\int(xdy-ydx)$ around the circle $x^2+y^2=1$ is

A. 0
B. π
C. 2π
D. -2π

76. Which of the following is true about $f(z)=z^2$?

A. Continuous and differentiable
B. Neither continuous nor differentiable
C. Continuous but not differentiable
D. Differentiable but not continuous

77. What will be the output of the following C code?

```
#include <stdio.h>
int  main ()
{
     int y = 10000;
     int y = 34;
     printf (" Hello World! %d\n", y);
     return 0;
}
```

A. Hello World! 1000
B. Hello World! followed by a junk value
C. Compile time error
D. Hello World! 34

78. What will be the final value of *x* in the following C code?

```
#include <stdio.h>
void main ()
{
    int x = 5 * 9 /  3 +  9;
}
```

A. 3 B. Depends on the compiler

C. 3.75 D. 4

79. How many times *i* value is checked in the following C program?

```
#include <stdio . h>
    int main ()
    {
        int i = 0:
        while (i < 3)
            i++;
        printf (" In while loop\n");
    }
```

A. 1 B. 2

C. 3 D. 4

80. What will be the output of the following code?

```
#include <stdio . h>
int main () {
    int a = 3, b = 5;
    int t = a;
    a = b;
    b = t ;
    printf("%d %d", a, b);
    return 0;
}
```

A. 55 B. 33

C. 53 D. 35

81. Which of the following is not a keyword in C?

A. int B. char

C. include D. str

82. What is the output of the following C code?

```
int main ()
{
int x = 10;
printf(”%d’’, x++ + ++x);
return 0;
}
```

A. 23 B. 21

C. 22 D. 20

83. What is the output of this recursive function call?

```
    int main( )
    {
        printf(”%d ”, factorial(5));
        return 0;
    }
int factorial (int n)
    {
        if (n==0)
        return 1;
    else
        return n * factorial (n – 1);
    }
```

A. 5 B. 24

C. Error D. 120

84. If a function $f(z)$ is continuous in region D and if $\int_C f(z)dz = 0$, taken around any simple closed contour C in D. Then $f(z)$ is

A. may or may not be Analytic
B. analytic
C. not Analytic
D. none of these

85. The value of the integral $\int_C \frac{dz}{z^2-2}dz$, where C is the circle $|z| = 2$ is

A. $-\pi i$
B. 0
C. $2\pi i$
D. πi

86. If $z = x + iy$, then $\left|e^{iz}\right|$ is equal to

A. e^{-y}
B. 1
C. e^{y}
D. $e^{x^2+y^2}$

87. Consider the functions $f(z) = x^2 + iy^2$ and $g(z) = x^2 + y^2 + ixy$. Then which of the following statements are true

A. *g* is analytic but not *f*
B. both *f* and *g* are analytic
C. *f* is analytic but not *g*
D. neither *f* nor *g* is analytic

88. The coefficient of $\frac{1}{z}$ in the expansion of $\log\left(\frac{z}{z+1}\right)$, $|z| > 1$ is

A. –1
B. 1/2
C. –1/2
D. 1

89. If D is the open unit disk in $\mathbb{C}$ and $f : \mathbb{C} \to D$ is analytic with $f(10) = 1/2$, then $f(10+i)$ is

A. 1/2
B. i
C. $10+i$
D. $-i$

90. The singular solutions of the differential equation $y = px + \frac{1}{p}$ are

A. $\pm 2\sqrt{x}$

B. $\pm x^2$

C. $\pm \sqrt{x}$

D. none of these

91. The function $f(z) = z^2$ maps the first quadrant onto

A. third quadrant

B. itself

C. right half-plane

D. upper half-plane

92. Which of the following is not the real part of the analytic function?

A. $1/\left(x^2 + y^2 + z^2\right)$

B. $x^2 - y^2$

C. $\cos x \cosh y$

D. $x + x/\left(x^2 + y^2\right)$

93. The radius of convergence of $\sum_{n=0}^{\infty} \frac{\left(1+\frac{1}{n}\right)^{n^2}}{n^3}$

A. e

B. ∞

C. $1/e$

D. 0

94. The residue of the function $f(z) = \frac{1+e^z}{\sin z + z\cos z}$ at $z = 0$ is

A. $2\pi i$

B. πi

C. 1

D. 0

95. The value of the integral $\int_{|z|=2} \left(x^2 - y^2 + 2ixy\right) dz$ is

A. πi

B. 1

C. 0

D. $2\pi i$

96. The value of the integral $\int\limits_{|z|=2} \frac{e^{2Z}}{(z+1)^4} dz$ is

A. πe

B. $2\pi e$

C. $8\pi i/3e^2$

D. $8\pi e$

97. The fixed points of $f(z) = \frac{z-1}{z+1}$ are

A. 0, 1

B. 1, 2

C. ± 1

D. $\pm i$

98. The function $f(z) = |z|^2$ is

A. differentiable everywhere

B. differentiable at a countable number of points

C. differentiable only at $z = 0$

D. nowhere differentiable

99. If $f(z)$ and $\overline{f(z)}$ are analytic, then

A. $f(z) = z$

B. f is a constant function

C. $f(z) = z^2$

D. none of these

100. The equation $a_0x^n + a_1x^{n-1} + ... + a_{n-1}x + a_n = 0$ has at least one root between 0 and 1 if

A. $\frac{a_1}{n+1} + \frac{a_2}{n} + ... + a_n = 0$

B. $\frac{a_0}{n} + \frac{a_1}{n-1} + ... + a_n = 0$

C. $\frac{a_0}{n+1} + \frac{a_1}{n} + ... + a_n = 0$

D. None of these

ANSWER SHEET

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

ROUGH WORK

ROUGH WORK

ROUGH WORK