OPSC
PGT
Previous Year Paper
(Mathematics)
03 Jul, 2022

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

T. B. C. : PGT – 6/20

Test Booklet Series

A

TEST BOOKLET

PART – B

(MATHEMATICS)

60037

Sl. No.

Time Allowed : 2 Hours

Maximum Marks : 100

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D**, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
3. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. **YOU ARE REQUIRED TO FILL UP & DARKEN ROLL NO., TEST BOOKLET / QUESTION BOOKLET SERIES IN THE ANSWER SHEET AS WELL AS FILL UP TEST BOOKLET / QUESTION BOOKLET SERIES AND SERIAL NO. AND ANSWER SHEET SERIAL NO. IN THE ATTENDANCE SHEET CAREFULLY. WRONGLY FILLED UP ANSWER SHEETS ARE LIABLE FOR REJECTION AT THE RISK OF THE CANDIDATE.**
5. This Test Booklet contains **100** items (questions). Each item (question) comprises four responses (answers). You have to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided, by **using BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. There will be no negative marking for wrong answer.
8. Before you proceed to mark (darken) in the Answer Sheet the responses (answers) to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions sent to you with your **Admission Certificate**.
9. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* issued to you. You are allowed to take with you the candidate's copy / second page of the Answer Sheet along with the **Test Booklet**, after completion of the examination, for your reference.
10. Sheets for rough work are appended in the Test Booklet at the end.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

1. Every quotient group of an abelian group is :

(A) Cyclic

(B) Non Abelian

(C) Abelian

(D) Complex

2. Let S_3 be the group of all permutations on these symbols with identity element e. Then the number of elements in S_3 that satisfy the equation $x^2 = e$ is :

(A) 2

(B) 4

(C) 3

(D) 1

3. The number of elements in the conjugacy class of the three cycle (234) in the Symmetric group S_6 is :

(A) 120

(B) 60

(C) 20

(D) 40

4. A commutative ring with unity is a field if it has :

(A) Ideals

(B) Homomorphism

(C) Isomorphism

(D) No proper ideals

5. If R is a unique factorization domain and a is non-unit in R then a can be expressed as a product of :

(A) Infinite number of prime elements of R

(B) Finite number of prime elements of R

(C) Finite number of ideal elements of R

(D) None of these

6. The field of quotients F of integral domain D is the :

(A) Extension of field

(B) Largest field containing D

(C) Smallest field containing D

(D) Smallest Ideal

7. Let Q be the field of rational numbers. The field $Q\left(\sqrt{2}\right) = \left\{a + b\sqrt{2} : a, b \in Q\right\}$ is a :

(A) Finite extension of field Q of rational numbers

(B) Finite extension of field of real numbers

(C) Finite extension of field of irrational numbers

(D) None of these

8. If p is a prime and a is any integer such that p is not a divisor of a so that (a, p) = 1 then :

(A) a^{p-1} is congruence to 0 mod p

(B) a^{p-1} is congruence to 1 mod p

(C) a^{p} is congruence to 1 mod p

(D) a^{p} is not congruence to 1 mod p

9. Applying Wilson's theorem 16 ! + 86 is divisible by :

(A) 321

(B) 231

(C) 171

(D) 323

10. By Fermats theorem if (n, 7) = 1, then $n^{12} - 1$ is :

(A) Divisible by 7

(B) Divisible by 3

(C) Divisible by 11

(D) Divisible by 2

11. Natural domain of the function $(|x| + \text{sgn}(x)) / ([x])$ is :

(A) $R - \{0\}$

(B) $R - \{1\}$

(C) $R - \{0 \le x \le 1\}$

(D) $R - \{3\}$

12. The number of limit points in every infinite and bounded set is :

(A) One

(B) At least one

(C) Infinite

(D) Zero

13. The sequence $x_n = \dfrac{n^2 + 2n + 3}{7n + 9}$ is :

(A) Divergent

(B) Convergent

(C) Constant sequence

(D) Oscillatory

14. The series $\sum_{n=1}^{\infty} \dfrac{\cos nx}{n^2}$ is :

(A) Divergent

(B) Convergent

(C) Constant sequence

(D) Oscillatory

15. Taylor series expansion of sin x at $x = \pi$ is :

(A) $x - x^3/3! + x^5/5! - \ldots\ldots\ldots\ldots$

(B) $x - x^2/2! + x^4/4! - \ldots\ldots\ldots\ldots$

(C) $-(x-\pi) + (x-\pi)^3/3! - \ldots\ldots\ldots\ldots$

(D) None of these

16. A function continuous on a compact domain is :

(A) Absolute continuous

(B) Continuous but not uniformly

(C) Discontinuous

(D) Uniformly continuous

17. The minimum value of the function $f(x, y) = x^2 + y^2 + 41$ over the real domain is :

(A) 0

(B) 41

(C) 1

(D) 21

18. By Greens theorem value of integral $\oint_C (\cos x \sin y - xy)dx + \sin x \cos y \, dy$, where C is unit circle is :

(A) 0

(B) 1

(C) 2π

(D) π

19. Area of ellipse $x = a\cos\theta$, $y = b\sin\theta$, $0 \le \theta \le 2\pi$ is :

(A) 1

(B) 2π

(C) πab

(D) πa

20. Gauss divergence theorem is used to convert :

(A) Line integral to surface integral

(B) Line integral to double integral and vice versa

(C) Surface integral to volume integral and vice-versa

(D) None of these

21. If $\overline{Z}$ is conjugate of z then $f(z) = e^{\overline{z}}$ is :

(A) Analytic everywhere

(B) Analytic at origin

(C) Nowhere analytic

(D) Not analytic at origin

22. If $f = u + iv$ is an analytic function in D and arg f(z) = constant then $f'(z)$:

(A) Does not exist

(B) Zero

(C) Purely imaginary

(D) Constant

23. If $f(z) = u + iv$ is analytic with $u = x^2 - y^2$ is harmonic then f(z) is :

(A) $z^3 + ic$

(B) $z + ic$

(C) $z^2 + ic$

(D) $\sin z + ic$

24. The transformation $w = f(z) = z e^{i\beta}$ represents :

(A) Rotation and Magnification

(B) Translation

(C) Magnification

(D) Rotation

25. The bilinear transformation $w = \frac{2z+3}{z-4}$ map the circle $x^2 + y^2 - 4x = 0$ onto the :

(A) Straight line $4u + 3 = 0$

(B) Circle $u^2 + v^2 - 4v = 0$

(C) Straight line $2u + 3 = 0$

(D) Straight line $4u + 1 = 0$

26. For complex number z the value of $\cosh^2 z - \sinh^2 z$ is :

(A) $1 + i$

(B) $1 - 2i$

(C) 1

(D) i

27. Cauchy's integral formula is used to solve :

(A) Initial value problem

(B) Integral in complex domain

(C) Boundary value problem

(D) Integral equation

28. The type and location of singularity in $e^{\frac{1}{z}}$:

(A) Removable singularity at $z = 0$

(B) Essential singularity at $z = 0$

(C) Essential singularity at $z = 1$

(D) Pole at $z = 0$

29. Using Residue theorem evaluate : $\int_c \frac{dz}{z-3}$, C:|z| = 5 counter-clockwise :

(A) $2\pi i$

(B) π

(C) πi

(D) 2π

30. The value of integral $\int_0^\infty \frac{\sin x}{x} dx$ is :

(A) π

(B) 3π

(C) 2π

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

31. The artificial variable is required in simplex method :

(A) In absence of slack variable

(B) In absence of surplus variable

(C) In absence of surplus and slack variables

(D) If basis matrix is not unit matrix after using surplus and slack variables

32. In dual simplex method initial basic feasible solution is :

(A) Optimal but not feasible

(B) Feasible

(C) Not optimal

(D) None of these

33. If the optimal solution to the linear programming problem yields the integer solution, then the current solution is :

(A) Unbounded but feasible

(B) Unbounded

(C) Optimal

(D) Infeasible

34. Let n, m be number of variables and constraints respectively. A degenerate feasible solution in simplex method is a feasible solution at which more than usual (n – m) number of variables are :

(A) 0

(B) 1

(C) 2

(D) 3

35. The size of the payoff matrix can be reduced by using :

(A) Rotation principle

(B) Transpose principle

(C) Inversion principle

(D) Dominance principle

36. Which method gives best result for initial BFS of transportation problem ?

(A) North-west corner rule

(B) Matrix minima method

(C) Vogels approximation method

(D) Row minima method

37. The dual of dual problem in LPP is :

(A) Constraint

(B) Dual problem

(C) Feasible

(D) Primal problem

38. In a dual problem we write original LPP in another form without affecting its :

(A) Objective function

(B) Optimality

(C) Constraints

(D) Unrestricted variable

39. In a balanced transportation problem if all unit transportation cost C_{ij} are decreased by a non-zero constant a then optimal solution of revised problem :

(A) Values of decision variables change but objective value remain unchanged

(B) Values of decision variables and objective value remain unchanged

(C) Values of decision variables remain unchanged but objective value changes

(D) Values of decision variables and objective value change

40. The unit cost C_{ij} of producing product i at plant j is given by the matrix $\begin{bmatrix} 14 & 12 & 16 \\ 21 & 9 & 17 \\ 9 & 7 & 5 \end{bmatrix}$. The total cost of the optimal assignment is :

(A) 25

(B) 20

(C) 22

(D) 28

41. Which numerical method to find solution of transcendental equation converges faster ?

(A) Secant method

(B) Newton's method

(C) One point iteration method

(D) Bisection method

42. The rate of convergence of Newton's method is :

(A) 1

(B) 1.618

(C) 2

(D) 3

43. For which of the following function $x^2 = 5$ is a fixed point ?

(A) $g(x) = x/5$

(B) $g(x) = 1 + \frac{4}{x+1}$

(C) $g(x) = x^2 - 4x$

(D) $g(x) = \sqrt{5}\,x$

44. The value of third order forward difference from following data is :

x	f(x)
0	13
2	27
4	49
6	73

(A) 1

(B) – 3

(C) 0

(D) – 6

45. Which interpolation is used for equi-spaced data ?

(A) Newtons forward interpolation

(B) Lagranges interpolation

(C) Newtons divided – difference interpolation

(D) Spline interpolation

46. Which is related to Trapezoidal rule for numerical integration ?

(A) $\frac{h}{2}[y_0 + y_n + 2(y_2 + y_4 + ...) + 4(y_1 + y_3 + ...)]$

(B) $\frac{h}{2}[y_0 + y_n + 2(y_1 + y_2 + ... + y_{n-1})]$

(C) $\frac{h}{2}[y_0 + 2(y_1\ y_2 + ... + y_n)]$

(D) None of these

47. The local truncation error for Euler's method is :

(A) O(1)

(B) O(h)

(C) $O(h^2)$

(D) $O(h^3)$

48. For Simpson's $\frac{1}{3}$rd rule the number of sub-intervals n must be :

(A) Even

(B) Odd

(C) Multiple of 3

(D) Multiple of 5

49. Runge-Kutta method is applicable to solve :

(A) First order ODE

(B) First order PDE

(C) Second order ODE

(D) Second order PDE

50. In Euler's method to solve ordinary differential equation :

(A) $y_{n+1} = y_n + h^2 f(x_n, y_n)$

(B) $y_{n+1} = h f(x_n, y_n)$

(C) $y_{n+1} = x_n + h f(x_n, y_n)$

(D) $y_{n+1} = y_n + h f(x_n, y_n)$

51. Each of the following subsets φ R, (0, 1), [0, 1] of R with the usual metric is :

(A) Complete

(B) Compact

(C) Connected

(D) Bounded

52. Let f : [0, 1] → R be a bounded Riemann integrable function and g : R → R be continuous then gof is :

(A) Riemann integrable

(B) Continuous

(C) Lebesgue integrable

(D) Not necessarily measureable

53. For subset A of a metric space which of the following implies the other three :

(A) A is closed

(B) A is bounded

(C) Closure of B is compact for every B ⊆ A

(D) A is compact

54. In the interval [– 1, 1] the series

$$\sum_{n=1}^{\infty} (-1)^{n-1} \frac{x^2 + n^2}{n^3} \text{ is :}$$

(A) Uniformly and absolutely convergent

(B) Uniformly but not absolutely convergent

(C) Neither uniformly nor absolutely convergent

(D) Absolutely convergent but not uniformly convergent

55. The sequence (f_n) where $f_n(x) = x^n$ is uniformly convergent in [0, k] if :

(A) k = 2

(B) k > 1

(C) 0 < k < 1

(D) k = 3

56. Let A be the set of points in the interval (0, 1) representing the numbers whose expansion as infinite decimals do not contain the digit 7. Then the measure of A is :

(A) 0

(B) 1

(C) 2

(D) ∞

57. The series $\sum_{n=1}^{\infty} \frac{x^n}{n\sqrt{n+1}}$, $|x| \leq 1$ is :

(A) Uniformly but not absolutely convergent

(B) Uniformly and absolutely convergent

(C) Divergent

(D) Absolutely convergent but not uniformly convergent

58. A uniformly continuous function is :

(A) Not measurable

(B) Measurable and simple

(C) Integrable and simple

(D) Measurable

59. Fatou's lemma is related to :

(A) Open mapping theorem

(B) Riemann integral

(C) Monotone convergence theorem

(D) Fundamental theorem of calculus

60. Let E be a non-measurable subset of (0, 1), define function f_1 and f_2 in (0, 1) as $f_1(x) = \begin{cases} \frac{1}{x} \text{ if } x \in E \\ 0, \text{ if } x \notin E \end{cases}$ and

$f_2(x) = \begin{cases} 0 \text{ if } x \in E \\ \frac{1}{x}, \text{ if } x \notin E \end{cases}$ then :

(A) f_1 is measurable but not f_2

(B) Both f_1 and f_2 are measurable

(C) Neither f_1 nor f_2 is measurable

(D) None of these

61. Given a non-trivial normed linear space, the non-triviality of its dual space is assured by :

(A) Hahn-Banach theorem

(B) Principle of uniform boundedness

(C) Open mapping theorem

(D) Closed graph theorem

62. All norms of a normed vector space X are equivalent provided :

(A) X is reflexive

(B) X is complete

(C) X is finite dimensional

(D) X is an inner product space

63. The norm of the linear functional f defined on C[– 1, 1] by f(x) = $\int_{-1}^{0} x(t)\,dt - \int_{0}^{1} x(t)\,dt$ is :

(A) 0

(B) 1

(C) 2

(D) 3

Where C[– 1, 1] denotes Banach space of all real valued functions on [– 1, 1].

64. Which of the following Banach space is not separable ?

(A) $L^1[0, 1]$

(B) $L^\infty[0, 1]$

(C) $L^2[0, 1]$

(D) C [0, 1]

65. Consider the Banach space C[0, π] with the supremum norm. The norm of the linear functional $L : C[0, \pi] \to R$ given by $L(f) = \int_0^\infty f(x) \sin^2 x\, dx$ is :

(A) 0

(B) 1

(C) π

(D) 2π

66. Let B be a Banach space (not finite dimensional) and $T : B \to B$ be a continuous operator such that range of T is B and T(x) = 0 implies x = 0. Then :

(A) T maps bounded sets to compact sets

(B) T^{-1} maps bounded sets to compact sets

(C) T^{-1} maps bounded sets to bounded sets

(D) T maps compact sets to open sets

67. Le the sequence (a_n) be a complete orthonormal set in a Hilbert space H. Then :

(A) For all bounded linear operators T on H, the sequence (Ta_n) is convergent in H

(B) For the identity operator I on H, the sequence (Ia_n) is convergent in H

(C) For all bounded linear operators f on H, sequence (a_n) is convergent in R

(D) For all bounded linear operators T on H, sequence (Ta_n) is divergent in H

68. For orthonormal set each vector has norm :

(A) 0

(B) 3

(C) 2

(D) 1

69. According to Gram Schmidt Orthonormalisation every finite dimensional inner product space has :

(A) Norm zero

(B) An orthonormal basis

(C) Linear dependent vector

(D) Negative element

70. The space 1_p is a Hilbert space if and only if :

(A) $p > 1$

(B) p is odd

(C) $p = \infty$

(D) $p = 2$

71. The set of vectors (1, 0, 0), (0, 1, 0), (0, 0, 0) are :

(A) Linear independent

(B) Linear dependent

(C) Form a basis

(D) None of these

72. Let W be a space spanned by $f = \sin x$ and $g = \cos x$. Then for any real value of θ, $f_1 = \sin(x + \theta)$, $g_1 = \cos(x + \theta)$:

(A) Are vectors in W

(B) Are linear independent

(C) Do not form a basis for W

(D) Form a basis for W

73. For $0 < \theta < \pi$, the matrix $\begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$:

(A) Has no real eigen value

(B) Is orthogonal

(C) Is symmetric

(D) Is skew-symmetric

74. The rank of matrix $A = \begin{bmatrix} 1 & 3 & 16 \\ 0 & 9 & 7 \\ 0 & 9 & 15 \end{bmatrix}$ is :

(A) 0

(B) 1

(C) 2

(D) 3

75. The eigen values of matrix $A = \begin{bmatrix} 1 & 8 & 6 \\ 0 & 7 & 23 \\ 0 & 0 & 5 \end{bmatrix}$ are :

(A) 0, 2, 4

(B) 1, 5, 7

(C) 1, 8, 6

(D) 3, 5, 8

76. The mapping $T : V_2(R) \to V_2(R)$ is defined by $T(a, b) = (a + b, a - b, b)$ is a linear transformation from $V_2(R)$ into $V_2(R)$. The rank and nullity of T are :

(A) Rank 1 and nullity 0

(B) Rank 1 and nullity 1

(C) Rank 2 and nullity 1

(D) Rank 2 and nullity 0

77. Let A and B be square matrices of order n. The matrix B is similar to matrix A if there is invertible square matrix C of order n such that :

(A) $B = AC$

(B) $A = B^{-1} CB$

(C) $B = C^{-1} AC$

(D) $C = AB$

78. The trace of the matrix $B = \begin{bmatrix} 1 & 3 & 16 \\ 2 & 9 & 7 \\ 18 & 6 & 5 \end{bmatrix}$ is :

(A) 18

(B) 10

(C) 15

(D) 22

79. Let f be a bilinear form on a vector space V over field F. The quadratic form on V associated with bilinear form f is the function q :

(A) $q(a) = 0$

(B) $q(a) = f(a, a)$ for all a in V

(C) $q(a) = f(a, 0)$ for all a in V

(D) $q(a) = f(0, a)$ for all a in V

80. The eigen values of a skew symmetric matrix are :

(A) Negative

(B) Real

(C) Absolute value one

(D) Zero or purely imaginary

81. The negation of Tautology is a :

(A) Simplification

(B) Disjunctive

(C) Contradiction

(D) Contrapositive

82. The implication P, $P \vee Q \Rightarrow Q$:

(A) Dilemma

(B) Simplification

(C) Disjunctive syllogism

(D) Addition

83. A polygon with 7 sides can be triangulated into :

(A) 5 triangles

(B) 11 triangles

(C) 13 triangles

(D) 7 triangles

84. Hasse diagrams are drawn for :

(A) Boolean algebra

(B) Adjacency matrix

(C) Lattices

(D) Partially ordered sets

85. Every finite lattice L is :

(A) Bounded

(B) Not bounded

(C) Only has upper bound

(D) Only has lower bound

86. Minimize the following Boolean expression using Boolean identities :

F(A, B, C) = (A + BC') (AB' + C)

(A) AC' + B

(B) A(B' + C)

(C) A + B + C'

(D) B + AC

87. What is the generating function for generating series 1, 2, 4, 8, 16, ... ?

(A) $\frac{2}{(1-5x)}$

(B) $\frac{1}{1-x^2}$

(C) $1 - 3x$

(D) $\frac{1}{(1-2x)}$

88. What is the solution to the recurrence relation $a_n = 6a_{n-1} - 9a_{n-2}$, $n \geq 2$ with $a_0 = 1$, $a_1 = 9$?

(A) 3n !

(B) $n^2 + 1$

(C) $2n^3$

(D) $(2n + 1)3^n$

89. An edge of G that is not in a given spanning tree is called :

(A) Rooted tree

(B) Branch

(C) Chord

(D) Path

90. In a 7-node directed cyclic graph, the number of Hamiltonian cycle is to be :

(A) 450

(B) 180

(C) 260

(D) 360

91. General solution of $(D^2 + 1)y = \cos x$ is :

(A) $y = A\cos x + B\sin x$

(B) $y = A\cos x + B\sin x + (x\sin x)/2$

(C) $y = A\cos x + B\sin x + x\cos x$

(D) $y = A\cos x + B\sin x + x^2\cos x$

92. If $P_n(x)$ is Legendre polynomial of degree n, $f(x) = \begin{cases} x, -1 \le x < 0 \\ 0, -0 \le x < 1 \end{cases}$ and $f(x) = a_0 P_0(x) + a_1 P_1(x) + a_2 P_2(x) + \ldots\ldots\ldots$ then :

(A) $a_0 = 0.25, a_1 = 0.5$

(B) $a_0 = -0.25, a_1 = 0.5$

(C) $a_0 = 0.5, a_1 = 0.25$

(D) $a_0 = 1, a_1 = 0.5$

93. General solution of the differential equation $x\frac{d^2y}{dx^2} - \frac{dy}{dx} + xy = 0$ using Bessel's function is :

(A) $y = A\,x\,J_1(x) + B\,x\,Y_1(x)$

(B) $y = A\,J_1(x) + B\,Y_1(x)$

(C) $y = A\,x\,J_0(x) + B\,x\,Y_0(x)$

(D) $y = A\,J_0(x) + B\,Y_0(x)$

94. Inverse Laplace transform of $\cot^{-1}\left(\frac{S}{\pi}\right)$ is :

(A) $\frac{\sin\pi t}{t}$

(B) $\sin\pi t$

(C) $\cos\pi t$

(D) $t\cos\pi t$

95. The Laplace transform of $t^2 \sin 8t$ is :

(A) $\frac{16(S^2+64)}{(S^2-64)^3}$

(B) $\frac{S}{S^2 - 34s + 81}$

(C) $\frac{16(S^2-64)}{(S^2+64)^3}$

(D) $\frac{S}{(S^2+64)^2}$

96. Inverse Laplace transform of $\frac{S}{(S^2+1)^2}$ is :

(A) $t\cos t$

(B) $t\cos 5t + 5\sin 5t$

(C) $\frac{t\sin t}{2}$

(D) $-5t\cos 5t + \sin 5t$

97. Fourier sine transform of $f(x) = \begin{cases} 1, 0 \le x < \ell \\ 0, x > \ell \end{cases}$ is :

(A) 0

(B) 1

(C) $\frac{\sin \omega \ell}{\omega}$

(D) $\frac{1 - \cos \omega \ell}{\omega}$

98. Fourier transform of $f(x) = \begin{cases} e^{kx}, x < 0 \\ 0, \quad x > 0 \end{cases}$ is :

(A) 0

(B) $\frac{1}{\sqrt{2\pi}\,(k - i\omega)}$

(C) $\frac{1}{(k - i\omega)}$

(D) 1

99. The equation $\frac{\partial u}{\partial t} = c^2 \frac{\partial^2 u}{\partial x^2}$ is known as :

(A) Wave equation

(B) Laplace equation

(C) Heat equation

(D) Poisson equation

100. Wave equation is classified as :

(A) Parabolic equation

(B) Hyperbolic equation

(C) Elliptic equation

(D) Harmonic equation

■■■■■■■■■■■■■■■■

SPACE FOR ROUGH WORK