SET-"X"

(Total No. of printed pages : 28)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

(PG-EE-2022)

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STATISTICS

	10	009
Sr. No.		_

Time: 1 ¹ / ₄ Hours	Total Quest	ions : 100	Max. Marks : 100
Roll No	(in figure)		(in words)
Name :		_ Father's Name : _	
Mother's Name :		_ Date of Examinat	ion :

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/ INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

1. All questions are compulsory.

- 2. The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A,B,C and D code will be uploaded on the university website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- 5. The candidate MUST NOT do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself. Answers MUST NOT be ticked in the Question book-let.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue <u>BALL POINT PEN</u> of good quality in the OMR Answer-Sheet.
- 8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.



uestion No.	enoitest Questions	juestion No.
1.	For a subspace W of a finite dimensional vector space V (F), Dim equal to (1) Dim V – Dim W (2) Dim V national (1) (2) Dim V	$\left(\frac{\mathbf{v}}{\mathbf{w}}\right)\mathbf{i}$
10	(3) $\operatorname{Dim} W$ (4) $\frac{\operatorname{Dim} V}{\operatorname{Dim} W}$	
2.	The set of ordered triplets (a ₁ , a ₂ , 0) of R ³ has dimension (1) 1 (2) 2 (3) 3 (4) 4	
3.	A set of vectors containing the null vector is (1) Linearly Independent (2) Linearly Dependent (3) Both (1) and (2) (4) None of these	
4.	A bijective linear transformation is called (1) Homomorphism (2) Monomorphism (3) Epimorphism (4) Isomorphism	.8

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Question No.	anoitzon Questions	Antession No.
ei (<mark>V)</mark>	The matrix $\begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$ is the matrix $\begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$	
	 (1) Unitary (2) Skew-symmetric (3) Orthogonal (4) Hermitian 	
6.	The characteristic roots of the matrix $\begin{bmatrix} 2 & \sqrt{2} \\ \sqrt{2} & 1 \end{bmatrix}$ are	4
	(1) 2, 1 (2) 0, 3	
•	(3) 1, $\sqrt{2}$ (4) 2, $\sqrt{2}$	
7.	The set of vectors $X_1 = (2, 1, 4), X_2 = (-3, 2, -1), X_3 = (1, is$	- 3, - 2
	(1) Linearly dependent (2) Linearly Independent	
	(3) Both (1) and (2) (4) None of these	
8.	The product of the eigenvalues of the matrix A is equal to $(1) A \qquad (2) \text{Trace of } A$	
•	(1) A (2) Trace of A (3) 1 (4) 0	

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Question No.	• encirses Questions
9.	If A is a square matrix, then A + A', AA' and A'A are
	(1) Symmetric (2) Skew symmetric
	(3) Hermitian (2) (4) Skew Hermitian (1)
10,	If A is an orthogonal matrix, then
	(1) $ A = 0$ (2) $ A = \pm 1$
	(3) $ A = 1$ (4) $ A = -1$
11.	The mathematical expression for continuity of a function is
	(1) $\lim_{x \to c} f(x) = f(c), \forall c \in [a, b]$ (2) $\lim_{x \to c} f(x) = f(c), \forall c \in (a, b)$
offibrio	(3) $\lim_{x \to c} f(x) = f(c), \forall c \in [a, b)$ (4) $\lim_{x \to c} f(x) = f(c), \forall c \in (a, b]$
12.	For $2x + 3y = \sin x$, then value of $\frac{dy}{dx}$ is
	(1) $\frac{\cos x - 2}{3}$ (2) $\frac{\cos x - 2}{2}$ (3)
	(3) $\frac{\tan x - 3}{3}$ (d.e) $\frac{\sin x - 2}{3}$ (e) (e) $\frac{\sin x - 2}{3}$ (e) (f) (f) (f) (f) (f) (f) (f) (f) (f) (f

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uestion No.	. anoitasu Questions	Question No.
13.	If $x = 6 \sin^{-1} 2t$ and $y = \frac{1}{\sqrt{4 - t^2}}$, then $\frac{dy}{dx}$ is	9. 11 4
	Symmetric (2) Skew symmetric Hermitian $\frac{5}{t+1}$ (2) (4) Skew Hermiti ² $t+1$ (1)	
	(3) $\frac{t}{1-42 t^2}$ (4) $\frac{1}{3(1-4t^2)}$	10 · UA
14.	$\lim_{x \to 0} \left(\frac{a^x + b^x}{2} \right)^{\frac{1}{x}} \text{ is equals to}(1) \qquad \qquad 1 = A $	
	in a the pression for continuity of a function is (1) a + b (2) ab	
	$(d, u) \ge 0 \forall (c) f = (x) t mit (x) = f(c) \forall c \in (u, b)$ $(d, u) \ge 1 (c), \forall c \in [a, b] (b)$ $(d, u) \ge 1 (c), \forall c \in [a, b] (b)$ $(d, u) = f(c), \forall c \in [a, b] (b)$	(8)
15.	If 'f' be a continuous and differentiable function on (a, b), th	nen the condition
	for the function 'f' to be increasing is	12. To-1
	(1) $f'(x) < 0 \forall x_1, x_2 \in (a, b)$	
	(2) $f'(x) > 0 \forall x_1, x_2 \in (a, b)$	
	(3) $f'(x) = 0 \forall x_1, x_2 \in (a, b)$	(8)
	(4) $f'(x) \ge 0 \forall x_1, x_2 \in (a, b)$	

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Code-A A-oboO anoite Questions Question No. The function f(x) =The integral $\int \sin^4 x \cos^2 x \, dx$ is 16. (1) Discontinuous at one point 1) n-eingutet selt. Near (2) Discontinuous at $\frac{1}{61}$ ct(2) we points (1)32 (3) Discontinuous at exactly three points π (4) $\frac{1}{32}$ Its ts appointing 32(3)16 The name of the property $\int f(x) dx = \int f(x) dx$ is 17. (1) Reverse integral property (2) Adding intervals property (3) Zero interval property (4) Adding integrand property At the point x = 0, the function $f(x) = |x|, -1 \le x \le 1$ is 18. (1) Continuous and differentiable First order, second degree Non-continuous and differentiable (2)(2) First order, first degree Continuous and non-differentiable (3) (3) Second degree, second ordero at (4) Neither continuous nor differentiable about the broose (4) PG-EE-2022 (Statistics) Code-A

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Question No.	enoites Questions	auteou No.
19.	The function f (x) = $\frac{4-x^2}{4x-x^3}$ is	
	(1) Discontinuous at one point	
	(2) Discontinuous at exactly two points	
	(3) Discontinuous at exactly three points	
	(4) Continuous at all points	
20.	The integral $\int_{1}^{2} \frac{1}{\sqrt{x^2-1}} dx$ converges to	
	1 (2) 1	
	(3) 0 (4) 3	
21.	The order and degree of the differential equation $\frac{d^2y}{dx^2} + \sqrt{1}$	$+\left(\frac{dy}{dx}\right)^3 = 0$
	are Continuous and differentiable at a of a line of a li	
	(1) First order, second degree	
	(2) First order, first degree	
	(3) Second degree, second order	
•	(4) Second order, first degree	
	$(a) f'(x) \geq 0 \forall \ x, x \in (x, 0).$	

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uestion No.	anoites Questions
22.	The n th order ordinary linear homogeneous differential equation
	has
	(x + 1) = 0 has ei $(1 + x)^{x^{2}} = y = e^{x} (x + 1)^{x}$ is
	(1) n-singular solutions (2) no singular solution
	(3) one singular solution (3) (4) $(n-1)$ singular solution
23.	The differential equation $\frac{d^2y}{dx^2} + \frac{dy}{dx} - 2y = 0$ has the solution
= 0 to b	(1) $y = c_1 e^{-2x} + c_2 e^x$ (2) $y = c e^{-2x}$
	(3) $y = c_1 e^{-2x} + c_2 e^{-x} + c_3$ (4) $y = c_1 e^{-2x} + c_2 e^{2x}$
24.	The equation $\frac{dy}{dx} + Py = Q$ is linear differential equation of first order
	The equation $\frac{1}{dx} + 1y = Q$ is inear unicrossian of
	The equation $\frac{1}{dx} + 1y = q$ is inical unicidential of $\frac{1}{dx} = \frac{1}{dx}$ if $\frac{1}{dx} = \frac{1}{dx} = \frac{1}{dx}$ (b) $\frac{1}{dx} = \frac{1}{dx} = \frac{1}{dx}$ (c)
	if $\frac{16}{x6} = \frac{16}{x6}$ (b) $\frac{16}{x6} = \frac{16}{x6}$ (c)
te fi hi	
a 6 b	if $\frac{M_0}{K_0} = \frac{M_0}{K_0}$ (b) $\frac{M_0}{K_0} = \frac{M_0}{K_0}$ (c) (1) P, Q are functions of x only
a 6 b	if $\frac{M_0}{K_0} = \frac{M_0}{K_0}$ (a) $\frac{M_0}{K_0} = \frac{M_0}{K_0}$ (b) (c) (1) P, Q are functions of x only

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Question No.	anoites Questions	ode
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25.	The integrating factor for the differential equation	
	The function $f(x) = \frac{\pi}{1-x^2}$ is	
	$(x+1)\frac{dy}{1} - y = e^{3x}(x+1)^2$ is	
	(2) no singular xDiution	
	$(x+1) \frac{dy}{dx} - y = e^{3x} (x+1)^2 \text{ is}$	
	(3) one singular sol $1 + \mathbf{x}$ (2) (4) $(n-1)$ singular $\frac{1}{1+\mathbf{x}}$ (1)	
	to acoust out at exactly takes points	
	(3) $\frac{1}{x^2+1}$ (4) x^2-1 (4) x^2-1	
	x +1 xb (4) x-Table intranentine aft	23.
26.	The necessary condition for the equation $M(x, y) dx + N(x, y) dy =$	
·	exact is $(x, y) dx + N(x, y) dy =$: 0 to b
	(3) $y = c_1 e^{i x_1 + c_2} $	
2	(1) $\frac{\partial N}{\partial y} = \frac{\partial M}{\partial x}$ (2) $\frac{\partial N}{\partial y} = -\frac{\partial M}{\partial x}$	
	(1) $\frac{\partial N}{\partial y} = \frac{\partial M}{\partial x}$ (2) $\frac{\partial N}{\partial y} = -\frac{\partial M}{\partial x}$	
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	· · · · · · · · · · · · · · · · · · ·	24
	(3) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$ (4) $\frac{\partial M}{\partial y} = -\frac{\partial N}{\partial x}$	
1.1.1	(3) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$ (4) $\frac{\partial M}{\partial y} = -\frac{\partial N}{\partial x}$	3
27.	The differential equation derived f	
27.	The differential equation derived from $y = A e^{2x} + B e^{-2x}$; A and	Bar
27.	The differential equation derived from $y = A e^{2x} + B e^{-2x}$; A and constants has the order	Bar
27.	The differential equation derived from $y = A e^{2x} + B e^{-2x}$; A and constants has the order	B are
	constants has the order viso γ only only (2) P. Q are the functions of γ only (2)	B are
	constants has the order viso γ only only (2) P. Q are the functions of γ only (2)	B are
	(1) 3 (2) 1 (3) (2) (2) (2) (3) (2) (3) (3) (3) (3) (3) (3) (3) (3) (3) (3	B are
	(1) 3 (2) 1 (3) (2) (2) (2) (3) (2) (3) (3) (3) (3) (3) (3) (3) (3) (3) (3	B are
	(1) 3 (2) 1 (3) (2) (2) (2) (3) (2) (3) (3) (3) (3) (3) (3) (3) (3) (3) (3	B are
	(1) 3 (2) 1 (6)	B are

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Set-X Dode-1		Set-X Code-A
uestion No.	anoitsei Questions	Question No.
28.	The ordinary differential equation $x \frac{dy}{dx} - y = 2x^2$ with initial $y(0) = 0$ has	
	(1) No solution (2) A unique solution	120
	(3) Two distinct solutions (4) An infinite number of	
29.	Which of the following statement is true ?	11
	(1) The set Q of rational numbers is neighbourhood points	of each of its
	(2) The set R of real numbers is neighbourhood of each of	of its points
	(3) The set N of natural numbers is neighbourhood points	of each of its
) for th	 (4) All the above statements are true 	
30.	If $\lim_{n \to \infty} a_n^{\frac{1}{n}} = \lim_{n \to \infty} \frac{a_n + 1}{a_n}$ provided that the limit on RHS ex	ists. This resul
	is known as creativity conditions of a LPP is called that	
	(1) Heine-Borel theorem (2) Cauchy 2 nd theorem	on limits
	(3) Squeeze principle (4) Leibnitz's rule	

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No.	Questions	noidest of
31.	$\lim_{n \to \infty} n^{\frac{1}{n}} \text{ is equal to } -\frac{\sqrt{b}}{\sqrt{b}} \times \text{ holdsupe lattice relation of } \mathbb{I}$	85
	y(0) = 0 has 0 (2) $a^{(1)} = 1 a^{(1)} (1) a^{(1)} = 1 a^{(1)} (1) a^{(1)$	
ions	(3) e (4) Log 2	
32.	The set $\{(-1)^n n\}$ is	
ti lo fo	(1) Bounded below but not above	28.
	(2) Bounded above but not below	a shere
	 (3) Bounded (4) Neither bounded below nor bounded above 	
	(4) Neither bounded below nor bounded above	for the
i lo dol	(4) Neither bounded below nor bounded above If $f(x) = \frac{1}{x^2}$ on [1, 4], then the values of L [f, P] and U [f, P] partition P = {1, 2, 3, 4} of [1, 4] are (1) $\frac{9}{144}, \frac{7}{36}$ (2) $\frac{61}{144}, \frac{49}{36}$	for the
i lo dol	(4) Neither bounded below nor bounded above If $f(x) = \frac{1}{x^2}$ on [1, 4], then the values of L [f, P] and U [f, P] partition P = {1, 2, 3, 4} of [1, 4] are (1) $\frac{9}{7}$ (2) 61 49	for the

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Question No.	anoitzes Questions
34.	If $f: [a, b] \rightarrow R$ is a bounded function and $P, P' \in P [a, b]$ such that $P \subset P'$, then which of the following is true ?
	(1) $L(f, P') \ge L(f, P)$ (2) $U(f, P') \le U(f, P)$
12	(3) $L(f, P') \le L(f, P)$ (4) Both (1) and (2) are true
35.	Every infinite bounded set of real numbers has a limit point. This result is known as
	(1) Heine-Borel Theorem (2) Cauchy I st theorem on limits
85	(3) Cauchy 2 nd theorem on limits (4) Bolzano-Weierstrass theorem
36.	The series $\sum_{n=1}^{\infty} \cos\left(\frac{1}{n}\right)$ is one can sold here view of a difference of the second secon
	(1) Convergent (2) Divergent (3)
	(3) Oscillating finitely (4) Oscillating infinitely
37.	A set of values of decision variables which satisfies the linear constraints and non-negativity conditions of a LPP is called its
	(1) Unbounded solution (2) Optimum solution
	(3) Feasible solution (4) None of these

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Question No.	anoiseen Questions	Question No.
38.	The feasible region for a LPP is shown shaded in the figure give $Z = 3x - 4y$ be the objective function, then minimum of Z occur $(0, 8)$ Feasible $(6, 8)$ Region $(6, 5)$	rs at
	(0,0) (5,0) (2) (0,8) (3) (5,0) (4) (4,10) (6)	86
39.	A basic solution is called non-degenerate if (1) All the basic variables are zero	36.
	 (2) None of the basic variable is zero (3) At least one of the basic variable is zero (4) Atmost one of the basic variable is zero 	
40.	Linear Programming Problem (LPP) involving more than two can be solved by (1) Graphical method (2) Matrix minima method (3) Hungarian method (4) Simplex method	vo variable

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uestion No.	aboites Questions
41.	The coefficient of slack variable in the objective function is
of est	$f(x) = x^2 - x^2$
	(3) 0 branditation (2) (4) 1 and the following (1)
42.	For maximization LPP, the Simplex method is terminated when all
inioq e	values
	(1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$
	(3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$
43.	The assignment problem is
	(1) Non-linear programming problem
	(2) Dynamic programming problem
	(3) Integer linear programming problem
	(4) Integer non-linear programming problem
44.	The solution to a Transportation Problem (TP) with 'm' rows and 'n' column
52.	is basic feasible if number of positive allocations are
	(1) $m + n$ (2) $m - n$
	(3) $m+n-1$ (4) $m+n+1$

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Question No.	anoides Questions
45.	The bisection method is applied to compute a zero of the function
	f (x) = $x^4 - x^3 - x^2 - 4$ in the interval [1, 9]. The method converges to a
	solution after :
	(1) First iteration (2) Three iterations
then all	(3) Two iterations (4) Five iterations
46.	If f (x) = x^2 , then the second order divided difference for the points
	x_0, x_1, x_2 will be $(x_1, x_2, x_2, x_3, x_3, x_3, x_3, x_3, x_3, x_3, x_3$
	(1) -1 (2) $-\frac{1}{x_1 - x_0}$ (2) $-\frac{1}{x_1 - x_0}$ (3)
	43. The assignment problem is (a)
89.	(3) 1 (4) $\frac{1}{x_2 - x_1}$ (5)
47.	The order of convergence of Newton-Raphson method is
	(3) 0 (4) 1
48.	The second approximation to a root of the equation $x^2 - x - 1 = 0$ in the
(4)	interval (1, 2) by bisection method will be
	(1) 1.9 (2) 2.35
	(3) 1.75 (4) 1.5
	(3) m+n-1

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uestion No.	Questions	No.
49.	The Newton-Raphson method is also called as	
	(1) Tangent method (2) (2) Secant method	
	(3) Chord method (4) Diameter method	
50.	Newton's formula for backward differences with usual notations is	54
68.	(1) $y_x = y_0 + \sum_{r=1}^n {\binom{u}{r}} \Delta^r y_0$ (2) $y_x = y_0 + \sum_{r=1}^{n-1} {\binom{u+r}{r}} \nabla^r y_0$	
	(2) Compact Data Read Cally Methody Stidgard shirts (2)	
1.19	(3) $y_x = y_0 + \sum_{r=1}^n {u+r-1 \choose r} \nabla^r y_0$ (4) None of these	
	Interpolation provides good estimates of missing values if a	nd on
51.		
smioal	b off: lo tablevape visatid ont et antwolfor edu te dantwirt	364.5
	(1) The change of values is consistent	
	(2) The series does not refer to abnormal periods (1)	
	(3) The arguments are equidistant	
	(4) All of the above	56.
52.	The third difference of a cubic Δ^3 y function are	
52.	(1) Constant (2) Non constant	
	(3) Variables (4) None of the above	

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Question No.	anol an Questions	ode
		stion
53.	Who is the father of Computer ?	0
		9.
	(1) Allan Turing (2) Charles Babbage	
	(3) Simur Cary (4) Augusta Adaming	
54.	CD-ROM stands for	50.
y, 65	(1) Compactable Read Only Memory	
	(2) Compact Data Read Only Memory	
	(3) Compactable Disk Read Only Memory	
ao bar	(4) Compact Disk Read Only Memory	
55.	Which of the following is the binary equivalent of the d	
47.	number 35?	ecima
	(1) 10001 aborned learned a of (2) 100101 aerree and (2)	
	(3) 100011 (4) 101001 (6)	
56.	What is unit of information ?	
	(1) Bit (2) Bite	88
	(3) Gram (4) Hertz (1) avoids out to accold (2)	
		The second second

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uestion No.	Questions
57.	Which shortcut key is used, to find a particular word in a word document? (1) CTRL+S (2) CTRL+F (3) CTRL+R (4) CTRL+Y
58.	VGA is (1) Video Graphics Array (2) Visual Graphics Array (3) Volatile Graphics Array (4) Video Graphics Adapter
59.	What does USB stand for ? (1) Universal Signal Board (2) Universal Signal Bus (3) Universal Serial Bus (4) Universal Serial Board
60.	 Which of the following is the correct abbreviation of COMPUTER ? (1) Commonly Occupied Machines used in Technical and Education Research (2) Commonly Operated Machines used in Technical and Environmenta Research (3) Commonly Oriented Machines used in Technical and Education Research (4) Commonly Operated Machines used in Technical and Educationa Research

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word 'Statistics' is used as Singular (2) Plural Singular and Plural (4) None of these a exclusive type distribution, the limits excluded are : Lower limits Upper limits Either of the lower or upper limits Lower and upper limits both the help of the Ogive curve, one can determine :	.88
Singular (2) Plural Singular and Plural (4) None of these a exclusive type distribution, the limits excluded are : Lower limits Upper limits Either of the lower or upper limits Lower and upper limits both	.88
Singular and Plural (4) None of these a exclusive type distribution, the limits excluded are : Lower limits Upper limits Either of the lower or upper limits Lower and upper limits both	.88
Lower limits Upper limits Either of the lower or upper limits Lower and upper limits both	88. 59.
Upper limits Either of the lower or upper limits Lower and upper limits both	59.
Either of the lower or upper limits Lower and upper limits both	59.
Lower and upper limits both	59.
Lower and upper limits both	in a star
	incirco d
	A AN
Median (2) Deciles	
Percentiles (4) All the above	
most appropriate diagram to represent the data relation thly expenditure on different items by a family is :	ng to th
Frequency Polygon (4) Line graph	
	thly expenditure on different items by a family is :Histogram(2) Pie ChartFrequency Polygon(4) Line graph

Question No.	anoitaeu Questions
65.	The correct relationship between A.M., G.M. and H.M. is :
	(1) $A.M. = G.M. = H.M.$ (2) $G.M. \ge A.M. \ge H.M.$
de	(3) $H.M. \ge G.M. \ge A.M.$ (4) $A.M. \ge G.M. \ge H.M.$
66.	For a group of 100 candidates, the mean was found to be 40. Later on,
	it was discovered that a value 45 was misread as 54. The correct mean is :
	15.
	(1) 40.50 (2) 39.85 (3)
	(3) 39.80 (4) 39.91 (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)
67.	The correct formula for variance of 'n' sample observations x_1, x_2, \dots, x_r
	is $\frac{1}{a}$ (3)
	(1) $\frac{1}{n-1} \sum_{i} (x_i - \overline{x})^2$ (2) $\frac{1}{n-1} \sum_{i} (x_i^2 - \overline{x}^2)$ (6)
ads to f	(1) $\frac{1}{n-1} \sum_{i} (x_i - \overline{x})^2$ (2) $\frac{1}{n-1} \sum_{i} (x_i^2 - \overline{x}^2)$ (3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$
68.	(3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$ Average wages of workers of a factory are Rs. 550 per month and
d of all a	(3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$ Average wages of workers of a factory are Rs. 550 per month and the standard deviation of wages is 110. The coefficient of variation
68.	
d od ebs:	(3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$ Average wages of workers of a factory are Rs. 550 per month and the standard deviation of wages is 110. The coefficient of variation

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Set-X Code-A

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Question No.	anoitzou Questions
69.	 In case of positive skewed distribution, the relation between mean, median and mode is : (1) Median > Mean > Mode (2) Mean > Median > Mode (3) Mean = Median = Mode (4) 2 Mean = 1.5 Median = Mode
70. 100	The idea of product moment correlation was given by :(1) R.A. Fisher(2) Sir Francis Galton(3) Karl Pearson(4) Spearman
71.	Standard error of the sample correlation coefficient 'r' is based on 'n' paired values is : (1) $\frac{1+r^2}{\sqrt{n}}$ (2) $\frac{1+r^2}{n}$ (3) $\frac{1-r^2}{\sqrt{n}}$ (4) $\frac{1+r^2}{\sqrt{n-1}}$
72.	 If the value of multiple correlation coefficient is near to 1, it leads to the conclusion that : (1) There is a lack of linear relationship (2) Linear relation is a good fit (3) There is a curvilinear relation
	(4) All of the above

SeteX

Code-A

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A-ebo	0	Set-X Code-A
uestion No.	Questions	restina No.
73.	Regression coefficient is independent of :	und hangle
	(1) Origin (2) Scale	(pd)
	(3) Both origin and scale (4) Neither origin nor scale	
74.	The function $Y = a + bX + cX^2 + dX^3$ represents :	(3)
density	e Probability function $f(x) - \infty \le x \le \infty$ is said to be probability	78. Th
	(1) A hyperbola (2) An exponential curve	
81.	(3) A parabola (4) Gompertz curve	Reference
75.	The mean deviation of the set of numbers 12, 6, 7, 3, 14 is:	5, 10, 18, 8
82.	(1) 3.25 (2) 2.25 (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	79. I.e
	(3) 4.25 (4) 5.25	
76.	If 'X' is a random variable with its mean \overline{X} , then the expression represents	$n E (X - \overline{X})^2$
	represents	
	(1) The variance of 'X' (2) Second Central momen	t t
	(3) Both (1) and (2) (4) The standard deviation	of 'X'

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A-ab	0	Set-X Code-A
Question No.	Questions	hoitse
77.	If 'X' is a random variable having its probability densit (pdf) f (x), then E $\left(\frac{1}{X}\right)$ is called	- etc
	(1) Arithmetic Mean (2) First Quartile	
70	(3) Harmonic Mean (4) All of these	
78.	The Probability function $f(x)$, $-\infty < x < \infty$ is said to be probability function if :	ity density
71.	(1) $\int_{-\infty}^{\infty} f(x) dx - 1 \neq 0$ (2) $\int_{-\infty}^{\infty} f(x) dx = 1$	
18, 5	(3) $\int_{0}^{\infty} f(x) dx = 1$ (4) $\int_{-\infty}^{\infty} f(x) dx = 0$	75. 1
79.	Let X be a continuous r.v. with pdf)
72.	$f(x) = \begin{bmatrix} a_x & ; \ 0 \le x \le 1 \\ a & ; \ 1 \le x \le 2 \\ -ax + 3a ; \ 2 \le x \le 3 \end{bmatrix}$	o to the
(X - X)	$\begin{bmatrix} x + 5a, 2 \le x \le 5 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$	A COM STACK
	then the value of 'a' is	
	(1) 0.4 (2) 0.5	
	(3) Both (1) and (2) (4) (4) (5) bas (1) dod (3) (6)	

(22)

uestion No.	active Questions
80.	Let X be a random variable with the following probability distribution :
	x -3 6 9
	P (X = x) $\frac{1}{6}$ $\frac{1}{2}$ $\frac{1}{3}$
89.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	(1) 43.5 (2) 45.37 (3)
	(3) 46.5 $\sigma = 0.0$ (2) (4) 43.4 $\sigma = 0.0$ (1)
81.	If X ~ N (μ , σ^2), then the standard normal variate is distributed
	as $\sigma_{\pm}^{\pm} = 0.0$, (4), (4), (4), (8)
	(1) N (0, σ^2) (2) N (μ , σ^2)
90.	(3) N (0, 1) (4) N (μ, 0) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4
82.	The moment generating function of Poisson distribution is
	(1) $e^{\lambda (e^{t}-1)}$ see to it (2) $e^{t (e^{\lambda}-1)}$ (3) $e^{t (e^{\lambda}-1)}$ (4) (4) (5)
	(3) $e^t - 1$ (4) $e^{\lambda(1 - e^t)}$
83.	The distribution function of the exponential distribution with parameter
91.	λ' is given by $\frac{p}{1-p-1}$ (2) $\frac{p}{1-p-1}$ (1)
	(1) $e^{-\lambda x}$ (2) $e^{-\lambda x} - 1$
	(3) $1 - e^{-\lambda x}$ $\frac{p}{1 + q - 1}$ (b) (4) $- e^{-\lambda x}$ $\frac{q}{1 + q - 1}$ (6)

Set-X

(23)

Set-X ode-A	0	Set-X Code-A
Question No.		
84.00	Which of the following is the mode of the rectangular distribut parameter A and B?	tion with
	(1) $\frac{A+B}{2}$ (2) $\frac{A-B}{2}$	
	(3) Mode does not exist (4) $A + B$	
85.	The Quartile Deviation of the normal distribution is	20.5.81
ributed	(1) $Q.D. = \frac{1}{2}\sigma$ (2) $Q.D. = \frac{2}{3}\sigma$ (3)	
2910111	(3) $Q.D. = \frac{2}{5}\sigma$ (4) $Q.D. = \frac{3}{4}\sigma$	81.
86.	If A and B are two independent events, then $P(\overline{A} \cap \overline{B})$ is equal	to
	(1) $P(\overline{A}) P(\overline{B})$ (2) $1 - P(A \cup B)$.28
	(3) $[1 - P(A)] [1 - P(B)]$ (4) All of these	
87.	The moment generating function of the geometric distribution is	3
N9111818	The distribution function of the exponential distribution with (1) $\frac{q}{1-q e^{t}}$ (2) $\frac{qp}{1-q e^{t}}$ (1)	.88
	(3) $\frac{p}{1-qe^{t}}$ (4) $\frac{q}{1-pe^{t}}$ (5)	

(24)

uestion No.	agoitant Questions	Juestion No.
88.	Which of the following is true ? A start of a model of the doubt	.88
	(1) $E(aX + b) = a E(X)$ (2) $E(aX + bY) = aE(X)$) + b
97.	(3) $E(aX + bY) = aE(X) + bE(Y)$ (4) All of the above	
89.	Two dice are rolled by two players A and B. A throws 10, the pr that B throws more than A is	obability
	The purchasing power of money is (8)	.58
98.	(1) $\frac{1}{12}$ (2) $\frac{1}{6}$ (3) $\frac{1}{6}$ (1)	
	(2) Equal to price index number star dash silised? (1)	
	(3) Twice the price in $\frac{1}{16}$, (4), ber	
90.	The mean of Binomial distribution B (n, p) is	
	Fisher's ideal formula does not satisfy :	94.
	(1) np (2) qn (2) qn (1) (1) Time reversal test (1) (2) Circular test sets (1) (0)	
.00.	(3) $np + 1$ (4) (4) $1 - np$ (5) (5)	by 30%
91.	When was the first census held in India ?	95.
	(1) Paasche's Index (2) (2) Laspeyre's Index (1) (1) 1886 (2) (2) 1896 (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	
	(3) Fisher's Ideal Index ⁽⁴⁾ (4) Walah Price Index 4) Fisher's Ideal (5) (4) Walah Price Index	

(25)

Cod	
Which of the following is not a division of NSSO ?	•
sortmeter and B?	
(1) Coordination and publication Division	•
(2) Field Data Division	
All of the above .	
(3) Data Processing Division	
(4) Survey Design and Research Design	
	01.7
The purchasing power of money is	
(1) Reciprocal of price indem un	
(1) Recorprocar of price muex number	
(2) Equal to price index number	
(b) I wice the price index number	
(4) Unequal to price index number	
A The mean of Bunomial distribution B (n, p) is	
risher's ideal formula does not satisfy :	
(1) Time reversal test (2) Circular test	1.1.1
(3) Factor reversal test (4) Unit test	
Which index number satisfies factor reversal test ?	•
(1) Paasche's Index (2) Laspeyre's Index	
(D) T: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
(3) Fisher's Ideal Index (4) Walsh Price Index	
	Questions Which of the following is not a division of NSSO ? (1) Coordination and publication Division (2) Field Data Division (3) Data Processing Division (4) Survey Design and Research Design The purchasing power of money is (1) Reciprocal of price index number (2) Equal to price index number (3) Twice the price index number (4) Unequal to price index number (3) Twice the price index number (4) Unequal to price index number (1) Time reversal test (2) Circular test (3) Factor reversal test (4) Unit test Which index number satisfies factor reversal test ?

PG-EE-2022 (Statistics) Code-A

Code-A

PG-EE-2022 (Statistics) Code-A

Code-A Question Questions No. 96. In a chain base method, the base period is Fixed (1)(2)Not fixed (3)Constant (4) Zero In India, the collection of vital statistics started for first time in 97. 720 (1)(2)1886 (3)1969 2014 (4) The death rate obtained for a segment of a population is known as 98. Specific death rate (1) (2)Crude death rate (3)Standardized rate (4) Vital index The elasticity for demand of the durable goods is 99. Zero (1) (2) Equal to unity Greater than unity (3) (4) Less than unity When the price of a product falls by 10% and its demand rises by 30%, 100. then the elasticity of demand is (1) 13 (2)3 (3) 10 (4) 30

Set-X

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SET_"X"

(Total No. of printed pages : 28)

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

(PG-EE-2022)



STATISTICS

Marks: 100

(in words)

Time: 1¼ Hours	Total Questions : 100 Max
Roll No	(in figure)
Name :	Father's Name :
Mother's Name :	Date of Examination :

(Signature of the candidate)

(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/ INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

- 1. All questions are compulsory.
- 2. The candidates must return the Question book-let as well as OMR answer-sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A,B,C and D code will be uploaded on the university website after the conduct of Entrance Examination.
 In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
- 5. The candidate MUST NOT do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question book-let itself. Answers MUST NOT be ticked in the Question book-let.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue <u>BALL POINT PEN</u> of good quality in the OMR Answer-Sheet.
- 8. BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED CORRECT AND COMPLETE BOOK-LET. COMPLAINTS, IF ANY, REGARDING MISPRINTING ETC. WILL NOT BE ENTERTAINED 30 MINUTES AFTER STARTING OF THE EXAMINATION.



Question No.		econte Questions •	uestion No.
1.		ndard error of the sample correlation coefficient 'r' is based	l on 'n'
	pair	ed values is : (1) A hyperbola (2) An exponential curve	
	(1)	$\frac{1+r^2}{\sqrt{n}} \longrightarrow x = 1 $ (2) $\frac{1+r^2}{n} = 1 $ slots and (3)	
. 18, 6	(3)	$\frac{1-r^2}{\sqrt{n}} \qquad (4) \frac{1+r^2}{\sqrt{n-1}}$	
2.		e value of multiple correlation coefficient is near to 1, it leads clusion that :	s to the
	(1)	There is a lack of linear relationship	
x-x)²	(2)	Linear relation is a good fit	.0
	(3)	There is a curvilinear relation	
	(4)	All of the above	
3.		ression coefficient is independent of :	7.
	(1)	Origin (2) Scale (x) (b)	
	(3)	Both origin and scale (4) Neither origin nor scale	

(1)

uestion No.	ano des Questions
4. 10	The function $Y = a + bX + cX^2 + dX^3$ represents : the basis of the
	(1) A hyperbola (2) An exponential curve
	(3) Aparabola (2) (4) Gompertz curve (1)
5.	The mean deviation of the set of numbers 12, 6, 7, 3, 15, 10, 18, 5
	is:
to the	(1) 3.25 1.25 (2) 2.25 (2) 2.25 (2) 2.25 (1) 2.2
	$(3) 4.25 \qquad (4) 5.25 \qquad (1)$
6.	
6.	If 'X' is a random variable with its mean \overline{X} , then the expression $E(X - \overline{X})$
6.	If 'X' is a random variable with its mean \overline{X} , then the expression $E(X - \overline{X})$ ' represents (1) The variance of 'X' (2) Second Central moment
6.	If 'X' is a random variable with its mean \overline{X} , then the expression $E(X - \overline{X})$ ' represents (1) The variance of 'X' (2) Second Central moment (3) Both (1) and (2) (4) The standard deviation of 'X'
6. 7.	If 'X' is a random variable with its mean \overline{X} , then the expression $E(X - \overline{X})$ ' represents (1) The variance of 'X' (2) Second Central moment
	If 'X' is a random variable with its mean \overline{X} , then the expression $E(X - \overline{X})$ ' represents (1) The variance of 'X' (2) Second Central moment (3) Both (1) and (2) (4) The standard deviation of 'X'
	If 'X' is a random variable with its mean X , then the expression E (X – X) represents (1) The variance of 'X' (2) Second Central moment (3) Both (1) and (2) (4) The standard deviation of 'X' If 'X' is a random variable having its probability density function

Indential Con

(2)

Question No.	anolitant Questions	Ruestion No.
8.000	The Probability function $f(x)$, $-\infty < x < \infty$ is said to be pro-	bability density
	function if :	il and
	(1) $\int_{-\infty}^{\infty} f(x) dx - 1 \neq 0$ (2) $\int_{-\infty}^{\infty} f(x) dx = 1$	(1)
	The series does not refer to abnormal periods, more than ∞^{-1}	(3)
16	(3) $\int_{0}^{\infty} f(x) dx = 1$ (4) $\int_{-\infty}^{\infty} f(x) dx = 0$	(8)
9.	Let X be a continuous r.v. with pdf	. (\$)
	$f(x) = \begin{bmatrix} a_x & ; 0 \le x \le 1 \\ a & ; 1 \le x \le 2 \end{bmatrix}$	12. The t
	$\begin{bmatrix} -ax + 3a; 2 \le x \le 3 \\ 0 \qquad ; x > 3 \end{bmatrix}$	
	then the value of 'a' is Statuter O to reduce a state and a	18. Who
	(1) 0.4 (2) 0.5 (2) (2) 0.5 (2) (2)	(t) A
	(3) 0.3 (4) 0.1	2 (8)
10.	Let X be a random variable with the following probability	y distribution :
	x -3 6 9 debagao	LA. CD-R
	P (X = x) $\frac{1}{6}$ $\frac{1}{2}$ $\frac{1}{3}$	
	The value of E (X^2) is	(3)
	(1) 40 5 (0) 45 97	
	(1) 43.5 (2) 45.57 (3) 46.5 (4) 43.4	(4) +0

PG-EE-2022 (Statistics) Code-B

(3)

Set-X Code-		Set-X Code-E
Question No.	anoliteou Questions	Question No.
111.6	Interpolation provides good estimates of missing values in	f and only
	if:	
	(1) The change of values is consistent	
	(2) The series does not refer to abnormal periods	
5.	(3) The arguments are equidistant	18, 1
	(4) All of the above the drive with about the book of X to 1	9.
12.	The third difference of a cubic Δ^3 y function are	
	(1) Constant (2) Non constant	
	(3) Variables (4) None of the above	•
13.	Who is the father of Computer ?	1 particular
	(1) Allan Turing (2) Charles Babbage	
ution :	(3) Simur Cary (4) Augusta Adaming	10.
14.	CD-ROM stands for	
	(1) Compactable Read Only Memory	
14.5	(2) Compact Data Read Only Memory	
	(3) Compactable Disk Read Only Memory	
	(4) Compact Disk Read Only Memory	0
	(3) Harmonic Mean (4) All of these	

(4)

Question No.	enoite Qu	estions .ol
15. moite:	number 95 9	binary equivalent of the decima
		2) 100101 doreeseM
tental	(3) 100011 (4	(2) Commonly Operated Mach (2) Research (4) (2) (2) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4
16.	What is unit of information ?	(3) Commonly Oriented Maci
	(1) Bit (2)	2) Bite
TEUOL		4) Hertz dorsoeofi
17.	Which shortcut key is used, to document?	o find a particular word in a wor
10.	(1) $CTRL + S$ (2) (2)	2) $CTRL + F$
	(3) CTRL + R (0, μ) M (4)	4) $CTRL + Y$ (1.0) / (8)
18.	VGA is not protected and the notest of the n	The moment generating function
	(1) Video Graphics Array (2	2) Visual Graphics Array
47.	(3) Volatile Graphics Array (4	4) Video Graphics Adapter
19.	What does USB stand for ?	The distribution function of the
	(1) Universal Signal Board (2	2) Universal Signal Bus
	(3) Universal Serial Bus (4	4) Universal Serial Board
	1.1.1	

PG-EE-2022 (Statistics) Code-B

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Question No.	Questions
20.	Which of the following is the correct abbreviation of COMPUTER?
	(1) Commonly Occupied Machines used in Technical and Education Research
	(2) Commonly Operated Machines used in Technical and Environmenta Research
	(3) Commonly Oriented Machines used in Technical and Education Research
14.	(4) Commonly Operated Machines used in Technical and Educationa Research
21.0	If X ~ N (μ , σ^2), then the standard normal variate is distributed as
	(1) N (0, σ^2) (2) N (μ , σ^2) (3) N (0, 1) (4) N (μ , 0)
22.	The moment generating function of Poisson distribution is
14.	(1) $e^{\lambda (e^{t}-1)}$ (2) $e^{t (e^{\lambda}-1)}$ (3) $e^{t}-1$ (4) $e^{\lambda (1-e^{t})}$ (5)
23.	The distribution function of the exponential distribution with parameter' λ ' is given by(1) $e^{-\lambda x}$ (2) $e^{-\lambda x} - 1$
	(3) $1 - e^{-\lambda x}$ (4) $-e^{-\lambda x}$

Indential Constants

PG-BD 2022 (9

(6)

Question No.	Questions	stion o.
24.	Which of the following is the mode of the rectangular distribution parameter A and B?	witl
	(1) $\frac{A+B}{2}$ (2) $\frac{A-B}{2}$ (2) $\frac{A-B}{2}$ (1) (3) $E(a X + b) = (A + X a) = (A + X a) = (A + A + b)$ (2) $\frac{A-B}{2}$ (2) (3) $E(a X + b) = (A + X a) = (A + A + b)$ (3) $E(a X + b) = (A + A + b)$ (4) (4) (4) $E(a X + b) = (A + A + b)$ (5)	
bility	(3) Mode does not exist (4) A + B	
25.	The Quartile Deviation of the normal distribution is	
23.	(1) $Q.D. = \frac{1}{2}\sigma$ (2) $Q.D. = \frac{2}{3}\sigma$ (1)	
	(3) Q.D. $=\frac{2}{5}\sigma$ (4) Q.D. $=\frac{3}{4}\sigma$	
26.	If A and B are two independent events, then $P(\overline{A} \cap \overline{B})$ is equal to	
	(1) $P(\overline{A}) P(\overline{B})$ (2) $1 - P(A \cup B)$	
34.	(3) $[1 - P(A)] [1 - P(B)]$ (4) All of these	
27.	The moment generating function of the geometric distribution is	
	(1) $\frac{q}{1-qe^{t}}$ (2) $\frac{qp}{1-qe^{t}}$ (2) $\frac{qp}{1-qe^{t}}$ (2) $\frac{qp}{1-qe^{t}}$ (3) $\frac{qp}{1-qe^{t}}$ (4) $\frac{qp}{1-qe^{t}}$ (5) $\frac{qp}{1-qe^{t}}$ (7) $\frac{qp}{1-qe^{t}}$	
	(3) $\frac{p}{1-qe^{t}}$ (4) $\frac{q}{1-pe^{t}}$ (5) = (6) 1	

PG-EE-2022 (Statistics) Code-B

(7)(8)
PG-F

uestion No.	enol Questions of		
28.	Which of the following is true ?		
	(1) $E(aX + b) = a E(X)$ (2) $E(aX + bY) = aE(X) + b$		
	(3) $E(aX + bY) = aE(X) + bE(Y)$ (4) All of the above		
29.	Two dice are rolled by two players A and B. A throws 10, the probability		
40.	that B throws more than A is a more and to not a real states of the second states of the seco		
	(1) $\frac{1}{12}$ (2) $\frac{1}{6}$		
	(3) $\frac{1}{18}$ (4) $\frac{1}{16}$		
	If A and B are two independent events, then P(A o B) technicity		
30.	The mean of Binomial distribution B (n, p) is		
	(1) np (2) $np-1$ (3) $(a \cup A) = 1$ (4) (2) $np-1$ (5) $(a \cup A) = 1$ (6) (6) (6) (6) (7) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7		
	(3) $np + 1$ (4) $1 - np$ (7) (6) $1 - np$ (7) (6) $1 - np$ (7) (6) $1 - np$ (7) (
31.	The mathematical expression for continuity of a function is		
	(1) $\lim_{x \to c} f(x) = f(c), \forall c \in [a, b]$ (2) $\lim_{x \to c} f(x) = f(c), \forall c \in (a, b)$		
	(3) $\lim_{x \to c} f(x) = f(c), \forall c \in [a, b)$ (4) $\lim_{x \to c} f(x) = f(c), \forall c \in (a, b]$		

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Set-X

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Question No.	Questions	
32.	For $2x + 3y = \sin x$, then value of $\frac{dy}{dx}$ is	35.
	(1) $\frac{\cos x - 2}{3}$ (2) $\frac{\cos x - 2}{2}$ (2) (2) (1)	
	(3) $\frac{\tan x - 3}{3}$ (4) $\frac{\sin x - 2}{3}$ (5) (2)	
33.	If x = 6 sin ⁻¹ 2t and y = $\frac{1}{\sqrt{4-t^2}}$, then $\frac{dy}{dx}$ is	
	(1) $\frac{t}{1-4t^2}$ (2) $\frac{-3}{1-4t^2}$ lenged of 1	36.
	(3) $\frac{t}{1-42t^2}$ (4) $\frac{1}{3(1-4t^2)}$ (1)	
34.	$\lim_{x \to 0} \left(\frac{a^x + b^x}{2} \right)^x$ is equals to	
44.	(1) $a + b$ (2) ab (2) ab (2) ab (3)	.78
	(1) Reverse integral $\operatorname{pr}\frac{1}{2}$ (2) Adding intervals $\overline{\operatorname{da}}_{V^{\circ}}$ (3)	
	(3) Zero interval property (4) Adding integrand property	

PG-EE-2022 (Statistics) Code-B

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Question No.	Questions	noisas .ol/
35.	If 'f' be a continuous and differentiable function on (a, b), then the co	ndition
	for the function 'f' to be increasing is	nannoi
	(1) $f'(x) < 0 \forall x_1, x_2 \in (a, b)$	
(3)	(2) $f'(x) > 0 \forall x_1, x_2 \in (a, b)$	
Tw	(3) $f'(x) = 0 \forall x_1, x_2 \in (a, b)$	
	(4) $f'(x) \ge 0 \forall x_1, x_2 \in (a, b)$	88
36. 36.	The integral $\int_{0}^{\frac{\pi}{2}} \sin^{4} x \cos^{2} x dx$ is	
13	(1) $\frac{\pi}{32}$ (1) (2) $\frac{1}{16}$ (3) (2) $\frac{1}{16}$ (3) (3)	
0	(3) $\frac{\pi}{16}$ (4) $\frac{1}{32}$.28
37.	The name of the property $\int_{a}^{b} f(x) dx = \int_{b}^{a} f(x) dx$ is	
	(1) Reverse integral property (2) Adding intervals property	
	(3) Zero interval property (4) Adding integrand property	

(10)

Question No.	Questions	estion No.
38.	At the point $x = 0$, the function $f(x) = x , -1 \le x \le 1$ is	
	(1) Continuous and differentiable	
	(2) Non-continuous and differentiable	
	(3) Continuous and non-differentiable	2.
	(4) Neither continuous nor differentiable	
39.	The function $f(x) = \frac{4 - x^2}{4x - x^3}$ is notative gates and state (2)	
	(1) Discontinuous at one point	
	(2) Discontinuous at exactly two points	.81
	(3) Discontinuous at exactly three points	
•	(4) Continuous at all points	
40.	The integral $\int_{1}^{2} \frac{1}{\sqrt{x^2 - 1}} dx$ converges to	
	(1) 2 (2) 1	
	l'ister a deal formula does not satisfy	.de/
	(3) Trans reversal test (2) Circular test	
	(3) Factor reversal test (4) Unit test	

Question No.	. Questions	reston No.
41.	When was the first census held in India ?	.88
	(1) 1870 (2) 1871 b bas erouanted (1)	
	(3) 1872 eldent (4) 1874 e economitado-aolí (3)	
42.	Which of the following is not a division of NSSO ?	
	(1) Coordination and publication Division	
	(2) Field Data Division	
36.	(3) Data Processing Division at $\frac{1}{(x-x)^2} = (x)$ 1 not barried 1	.88
	(4) Survey Design and Research Design	
43.	The purchasing power of money is the approximation of the second	
	(1) Reciprocal of price index number are appointed (6)	
	(2) Equal to price index number (1) this encounting (4)	
	(3) Twice the price index number	.01
37.	(4) Unequal to price index number	
44.	Fisher's ideal formula does not satisfy :	
	(1) Time reversal test (2) Circular test	
	(3) Factor reversal test (4) Unit test	

PG-EE-2022 (Statistics) Code-B

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Question No.	ano resultions		
45.	Which index number satisfies factor reversal test ?	in 1081	
	(1) Paasche's Index (2) Laspeyre's Index		
Ar	(3) Fisher's Ideal Index ⁶ (4) Walsh Price Index ⁶¹		
46.	In a chain base method, the base period is		
55.	(1) Fixed (2) Not fixed	51.	
Đ	(3) Constant (2) (4) Zero (1)		
47.	In India, the collection of vital statistics started for first time in	1	
	(1) 720 (2) 1886 (2)	52.	
	(3) 1969 (4) 2014 and 1979 (1)	reet inc	
48.	The death rate obtained for a segment of a population is known a	as	
	(1) Specific death rate (2) Crude death rate		
67.	(3) Standardized rate (4) Vital index	12	
49.	The elasticity for demand of the durable goods is	A second	
	(1) Zero (2) Equal to unity	58.	
	(3) Greater than unity (4) Less than unity (1)		
	(3) Perceptiles (a) $\frac{1}{2} \frac{1}{6}$ (b) (4) All the above) $\frac{1}{2} \frac{1}{6}$ (c)		

Set-X

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	Se	t-:	X	
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Question No.	Questions	Code
	4 ····································	1.01
50.	When the price of a product falls by 10% and its demand rise,	s by 30
hen was	(1) the classicity of demand is	
) 1870	(3) Fisher's Ideal Index ⁶ ⁽²⁾ (apr. Walsh Price Index	
51.	In a chain base method, the base period is	.8.
Which o	The word 'Statistics' is used as	
	(1) Singular (2) Plural (2)	No Cas
	(3) Singular and Plural (4) None of these	
52.	In an exclusive type distribution, the limits excluded are :	
	(1) Lower limits (5) (8) (8)	
Theppe	(2) Upper limits	8:
	(3) Either of the lower or upper limits	
(2)	(4) Lower and upper limits both	
53. 1	With the help of the Ogive curve, one can determine :	49.
	1) Median (2) Deciles	
	B) Percentiles (4) All the above	
a) T	ime reversal test (2) Circular test	

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1015

Code-B Question Questions No. The most appropriate diagram to represent the data relating to the 54. monthly expenditure on different items by a family is : (2) Pie Chart Histogram (1)"Lungs" Frequency Polygon (4) Line graph (3)The correct relationship between A.M., G.M. and H.M. is : 55. (1) A.M. = G.M. = H.M. (2) (2) $G.M. \geq A.M. \geq H.M.$ (3) $H.M. \geq G.M. \geq A.M.$ (4) A.M. \geq G.M. \geq H.M. For a group of 100 candidates, the mean was found to be 40. Later on, 56. it was discovered that a value 45 was misread as 54. The correct mean is : The idea of product moment correlation was given by : (1)40.50 (2)39.85 (3)39.80 (4) 39.91 The correct formula for variance of 'n' sample observations $x_1, x_2,, x_n$ 57. is (1) $\frac{1}{n-1} \sum_{i} (x_i - \overline{x})^2$ (2) $\frac{1}{n-1} \sum_{i} (x_i^2 - \overline{x}^2)$ (3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$ PG-EE-2022 (Statistics) Code-B

Set-X

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(16)

Code-B Question • Questions No. The set $\{(-1)^n n\}$ is 62. (1) Bounded below but not above (2) Bounded above but not below (3) Bounded and Bounded (3) Bounded (3) (3) (4) Neither bounded below nor bounded above If $f(x) = \frac{1}{x^2}$ on [1, 4], then the values of L [f, P] and U [f, P] for the 63. partition $P = \{1, 2, 3, 4\}$ of [1, 4] are $\frac{9}{144}, \frac{7}{36}$ (2) $\frac{61}{144}, \frac{49}{36}$ (3) (1)(3) $\frac{13}{144}, \frac{9}{36}$ tea double (4) None of these sector to tea A and non-negativity conditions of a LPP 18 called If $f:[a, b] \rightarrow R$ is a bounded function and $P, P' \in P[a, b]$ such that $P \subset P'$, 64. then which of the following is true? (2) U (f, P') \leq U (f, P) (1) $L(f, P') \ge L(f, P)$ (3) $L(f, P') \le L(f, P)$ (4) Both (1) and (2) are true PG-EE-2022 (Natistics) Code-B

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Question No.	n Questions				
65.	Every infinite bounded set of real numbers has a limit point. This resul				
Aver the s	is known as				
38	(1) Heine-Borel Theorem (2) Cauchy I st theorem on limits				
(L) (G)	(3) Cauchy 2 nd theorem on limits (4) Bolzano-Weierstrass theorem				
66.	The series $\sum_{n=1}^{\infty} \cos\left(\frac{1}{n}\right)$ is				
(1)	(1) Convergent (2) Divergent				
	(3) Oscillating finitely (4) Oscillating infinitely				
67.	A set of values of decision variables which satisfies the linear constraints and non-negativity conditions of a LPP is called its				
CP.	[If f: [a, b] - R is a bounded function and P, P = P [a, b] such that]				
	(1) Unbounded solution (2) Optimum solution				
	(3) Feasible solution (4) None of these				
	(3) 1. ((P) s1. ((P) 2 gal- () Both (1) and (2) are true				

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PG-EE-2022 (Statistics) Code-B

(19)02)

uestion No.	. and Questions
71.	The coefficient of slack variable in the objective function is
	Z = 3x - 4y be the objective function, then minimum of Z coords at M (2) M (2)
	(3) 0 Home-Borel Theorem (4) 1 (8.0)
72.	For maximization LPP, the Simplex method is terminated when all values
188.	(1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$ (3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$
	(3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$ (0.0) (1)
73.	The assignment problem is (1) (1) (2) Divergent (0, d) (8)
	 Non-linear programming problem Dynamic programming problem (2) Dynamic programming problem
67.	(3) Integer linear programming problem
	 (4) Integer non-linear programming problem (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)
74.	The solution to a Transportation Problem (TP) with 'm' rows and 'n' columnsis basic feasible if number of positive allocations are(1) $m + n$ (2) $m - n$ (3) $m + n - 1$ (4) $m + n + 1$

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Question No.	Questions	Code-
75.	The bisection method is applied to compute a zero of the $f(x) = x^4 - x^3 - x^2 - 4$ in the interval [1, 9]. The method conversion of the solution after :	functio erges to
9	(1) First iteration (2) Three iterations	02
	(3) Two iterations (4) Five iterations	
76.	If f (x) = x ² , then the second order divided difference for th x_0, x_1, x_2 will be (1) -1 (2) $-\frac{1}{x_1 - x_0}$ (3) 1 (4)	e point:
	(3) 1 (4) $\frac{1}{x_2 - x_1}$.16
77.	The order of convergence of Newton-Raphson method is	
	(3) 0 (4) 1 degree, second degree, second (5)	
	The second approximation to a root of the equation $x^2 - x - 1 = 0$ interval (1, 2) by bisection method will be	and the second
	(1) 1.9 (2) 2.35	82.
(3) 1.75 dulos telegois on (2) (4) 1.5 dubitulos telegois o (1)	
	(3) one singular solution (4) (1) $(n-1)$ singular solution	

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Question No.	Questions		
79.	The Newton-Raphson method is also called as		
4-01-009	(1) Tangent method (2) Secant method		
(1) -	(3) Chord method (4) Diameter method		
80.	Newton's formula for backward differences with usual notations is		
efaioq	(1) $y_x = y_0 + \sum_{r=1}^n {\binom{u}{r}} \Delta^r y_0$ (2) $y_x = y_0 + \sum_{r=1}^{n-1} {\binom{u+r}{r}} \nabla^r y_r$		
	(3) $y_x = y_0 + \sum_{r=1}^n {u+r-1 \choose r} \nabla^r y_0$ (4) None of these		
81.	The order and degree of the differential equation $\frac{d^2y}{dx^2} + \sqrt{1 + \left(\frac{dy}{dx}\right)^3} = 0$ are		
CD-	(1) First order, second degree		
(2) 0	(2) First order, first degree		
(3) 1	(3) Second degree, second order		
di cui o i	(4) Second order, first degree		
82.	The n th order ordinary linear homogeneous differential equation		
((1) n-singular solutions (2) no singular solution		
(3) one singular solution (4) $(n-1)$ singular solution		

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uestion No.	• Questions	adilassi .dei
83.	The differential equation $\frac{d^2y}{dx^2} + \frac{dy}{dx} - 2y = 0$ has the solution	86,
	(1) $y = c_1 e^{-2x} + c_2 e^x$ (2) $y = c e^{-2x}$	
	(3) $y = c_1 e^{-2x} + c_2 e^{-x} + c_3$ (4) $y = c_1 e^{-2x} + c_2 e^{2x}$	minte
84.	The equation $\frac{dy}{dx} + Py = Q$ is linear differential equation of finite of the second se	rst orde
ad Ba	 (1) P, Q are functions of x only 	87.
213.	(2) P, Q are the functions of y only	us reau
	(3) P, Q are the functions of x and y	
	(4) P, Q are the functions of none of x and y	
85.	The integrating factor for the differential equation	.88
	$(x + 1) \frac{dy}{dx} - y = e^{3x} (x + 1)^2$ is	
BILLI	(1) No solution (2) A unique solution $\frac{1}{1+x}$ (2) $x+1$ $\frac{1}{1+x}$ (1) $\frac{1}{1+x}$ (2) $x + 1$ $\frac{1}{1+x}$ (1) (3) Two distinct solutions (4) An infinite number of solutions	
	(c) i wo man our mu (c) subministration (c)	

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No.	Questions
86.	The necessary condition for the equation $M(x, y) dx + N(x, y) dy = 0$ to exact is
80	(1) $\frac{\partial N}{\partial y} = \frac{\partial M}{\partial x}$ (2) $\frac{\partial N}{\partial y} = -\frac{\partial M}{\partial x}$
ohre Je	(3) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$ (4) $\frac{\partial M}{\partial y} = -\frac{\partial N}{\partial x}$
87.	The differential equation derived from $y = A e^{2x} + B e^{-2x}$; A and B a constants has the order
0.1.	(1) 3 (2) 1
	(3) P. Q are the functions of x and y (3) 4
	(4) P. Q are the functions of none of x and y
88.	The ordinary differential equation $x \frac{dy}{dx} - y = 2x^2$ with initial condition
	and the second sec

Bet-X Code-B

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Code-I Questions
Which of the following statement is true ?
(1) The set Q of rational numbers is neighbourhood of each of its points
(2) The set R of real numbers is neighbourhood of each of its points
(3) The set N of natural numbers is neighbourhood of each of its points
(4) All the above statements are true
If $\lim_{n \to \infty} a_n^{\frac{1}{n}} = \lim_{n \to \infty} \frac{a_n + 1}{a_n}$ provided that the limit on RHS exists. This result is known as
(1) Heine-Borel theorem (2) Cauchy 2 nd theorem on limits
(3) Squeeze principle (4) Leibnitz's rule
For a subspace W of a finite dimensional vector space V (F), $Dim\left(\frac{V}{W}\right)$ is
equal to (1) $\operatorname{Dim} V - \operatorname{Dim} W$ (2) $\operatorname{Dim} V$
(3) $\operatorname{Dim} W$ (4) $\frac{\operatorname{Dim} V}{\operatorname{Dim} W}$ (5)

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Set-X

Question		Set-X Code-]
No.	enoise Questions	Question No.
92.	The set of ordered triplets $(a_1, a_2, 0)$ of R ³ has dimension	52.
it of it	(1) The set Q of rati $S_{12}(2)$ unders is neighbourhoof (1)	
	(3) 3 (4) 4 straing	
93.	A set of vectors containing the null vector is	
fi lo do	(1) Linearly Independent (2) Linearly Dependent	
(3)	(3) Both (1) and (2) (4) None of these	
94.	A bijective linear transformation is called	
n be t Jeen an	(1) Homomorphism (2) Monomorphism	
	(3) Epimorphism (4) Isomorphism	
95.	The matrix $\begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$ is	
	olure stindie.l(1)olure stindie.l(2)(1)Unitary(2)Skew-symmetric	
(÷)-	(3) Orthogonal (4) Hermitian agedus and	.10
96.	The characteristic roots of the matrix $\begin{bmatrix} 2 & \sqrt{2} \\ \sqrt{2} & 1 \end{bmatrix}$ are	
·	(1) 2, 1 (2) 0, 3 (2) $\sqrt{2}$ (2) (2) (3)	
	(3) $1, \sqrt{2}$ (4) $2, \sqrt{2}$	

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Quest No.		Set Cod
	Questions	and the second second
97.	The set of vectors V	
	The set of vectors $X_1 = (2, 1, 4), X_2 = (-3, 2, -1), X_3 =$ is	/1
		(1, -3, -
	(1) Linearly dependent (2) Linearly L	
	(-) Intearly Independent	
	(0) Dutin (1) and (0)	
98.	(1) None of these	
	The product of the eigenvalues of the matrix A is equal to (1) A	
	(1) A	
	(2) Trace of A	
1.1.1.1.1	(3) 1	
99.	(4) 0	
	If A is a square matrix, then $A + A'$, AA' and $A'A$ are	
	(1) Symmetric	
	(1) Symmetric (2) Skew symmetric	
	(3) Hermitian (4) Cl	
00	(4) Skew Hermitian	
00.	If A is an orthogonal matrix, then	
	(1) $ A = 0$ (2) $ A = \pm 1$	
. (3) $ A = 1$	
	(4) $ A = -1$	
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SET-"X"

(Total No. of printed pages : 28)

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STATISTICS

Time: 1¼ Hours	Total Questions : 100	Max. Marks : 100
Roll No	_ (in figure)	(in words)
Name :	Father's Name :	
Mother's Name :	Date of Examina	tion :

(Signature of the candidate)

(Signature of the Invigilator)

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Set-X

Question No.	n Questions			
1.	The coefficient of slack variable in the objective function is			
of segre	(1) $-\mathbf{M}$ (2) \mathbf{M} refractions			
10.	(3) 0 (4) 1 outereti terri (1)			
2.	For maximization LPP, the Simplex method is terminated when a values			
le point	6. If $f(x) = x^2$, then the second order divided difference for t			
	(1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$			
	(3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$			
3.	The assignment problem is			
	(1) Non-linear programming problem			
	(2) Dynamic programming problem			
	(3) Integer linear programming problem			
	(4) Integer non-linear programming problem			
4.	The solution to a Transportation Problem (TP) with 'm' rows and 'n' columns			
10	is basic feasible if number of positive allocations are			
	(1) $m + n$ (2) $m - n$			
	(3) $m+n-1$ (4) $m+n+1$			

(1)

Question No.	enoiteenQuestions
5.	The bisection method is applied to compute a zero of the function
	f (x) = $x^4 - x^3 - x^2 - 4$ in the interval [1, 9]. The method converges to a solution after :
	(1) First iteration (1) (2) Three iterations 0 (8)
when a	(3) Two iterations (4) Five iterations
6.	If f (x) = x^2 , then the second order divided difference for the points
	x_0, x_1, x_2 will be $0 \le S + O(S)$ $0 \le S - O(O)$
	(1) -1 $0 \ge x + 0$ (1) $-\frac{1}{x_1 - x_0}$ $0 \ge x - 0$ (1)
	C The assignment problem is $\frac{1}{(1)} \text{Non-linear pr}_{q\mathbf{X} = 2} \mathbf{x}_{ming problem} (1)$
7.	The order of convergence of Newton-Raphson method is
	(3) Integer linear programming problem (3)
	(4) Integer non-linear programming problem
8.	The second approximation to a root of the equation $x^2 - x - 1 = 0$ in the
ermolos	interval (1, 2) by bisection method will be
	(1) 1.9 (2) 2.35
	(3) 1.75 (4) 1.5

PG-EE-2022 (Statistics) Code-C

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Set-X

(2)

Opde Code-C Question Questions No. The Newton-Raphson method is also called as 9. (2) Secant method Tangent method (1)(4) Diameter method Chord method (3)10. Newton's formula for backward differences with usual notations is (1) $y_x = y_0 + \sum_{r=1}^n {\binom{u}{r}} \Delta^r y_0$ (2) $y_x = y_0 + \sum_{r=1}^{n-1} {\binom{u+r}{r}} \nabla^r y_r$ (3) $y_x = y_0 + \sum_{r=1}^n {\binom{u+r-1}{r}} \nabla^r y_0$ (4) None of these The order and degree of the differential equation $\frac{d^2y}{dx^2} + \sqrt{1 + \left(\frac{dy}{dx}\right)^3} = 0$ 11. are First order, second degree (1)First order, first degree (2)Second degree, second order (3)Second order, first degree (4)The nth order ordinary linear homogeneous differential equation 12. has n-singular solutions (2) no singular solution (1)(4) (n-1) singular solution one singular solution (3)

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Question No.	anoise Questions	Co
13.	The differential equation $\frac{d^2y}{dx^2} + \frac{dy}{dx} - 2y = 0$ has the solution	
	(1) $y = c_1 e^{-2x} + c_2 e^x$ (2) $y = c e^{-2x}$	
ai ai G	(3) $y = c_1 e^{-2x} + c_2 e^{-x} + c_3$ (4) $y = c_1 e^{-2x} + c_2 e^{2x}$.0
14.	The equation $\frac{dy}{dx} + Py = Q$ is linear differential equation of f if (1) P, Q are functions of x only	irst (
	 (2) P, Q are the functions of y only (3) P, Q are the functions of x and y 	.11
Te	(4) P, Q are the functions of none of x and y	
De	The integrating factor for the differential equation $(x + 1) \frac{dy}{dx} - y = e^{3x} (x + 1)^2$ is	
	(1) $\frac{1}{x+1}$ (2) $x+1$	
	(3) $\frac{1}{x^2+1}$ (4) x^2-1 (6)	
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Question			Longo Code-C	
No.	GACOUCIIS			
16.	The necessary condition for the exact is			
points	(1) $\frac{\partial N}{\partial y} = \frac{\partial M}{\partial x}$	(2) $\frac{\partial N}{\partial y} = -\frac{\partial M}{\partial x}$		
jo dos	(3) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$	(4) $\frac{\partial M}{\partial y} = -\frac{\partial N}{\partial x}$		
17. Jeen aid [*]	The differential equation deri constants has the order	(d) Nord + These	A and B are	
24.	(1) 3 chine or transformation	(2) 1 as sword a		
etim	(3) Cauchy 2 nd theory 2 (8)	(1) Heine Borel theorem (1)		
18.	The ordinary differential equations of the ordinary differential equation of the second statement of t			
25.	(1) No solution	ot is up (2) A unique solution W mid – V mid (1		
	(3) Two distinct solutions	(4) An infinite number of a		
DCEE	2022 (Statistics) Code-C	2 (Statistics) Code-C	PG-EE-202	

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Question	n Code
No.	Autoitzou Questions
19.	Which of the following statement is true ?
	(1) The set Q of rational numbers is neighbourhood of each of points
	(2) The set R of real numbers is neighbourhood of each of its points
16	(3) The set N of natural numbers is neighbourhood of each of i points
and B	(4) All the above statements are true
20.	If $\lim_{n \to \infty} a_n^{\frac{1}{n}} = \lim_{n \to \infty} \frac{a_n + 1}{a_n}$ provided that the limit on RHS exists. This results
· · · · · ·	is known as I (2)
	(1) Heine-Borel theorem (2) Cauchy 2 nd theorem on limits
	(3) Squeeze principle (4) Leibnitz's rule
21.	For a subspace W of a finite dimensional vector space V (F), $Dim\left(\frac{V}{W}\right)$ i
	equal to
	(1) $\operatorname{Dim} V - \operatorname{Dim} W$ (2) $\operatorname{Dim} V$ (1)
	(3) $\operatorname{Dim} W$ (4) $\frac{\operatorname{Dim} V}{\operatorname{Dim} W}$ (5)

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(6)

Question	Questions	Code-
No.	questions	No.
22.	The set of ordered triplets $(a_1, a_2, 0)$ of \mathbb{R}^3 has dimension	
	The characteristic roots of the matrix vi is are	26.
	(1) 1 (2) 2	
	(1) 2, 1 $t = A (4)$ (2) 0, 3 $t = A (5)$	
	(3) 3 (4) 4	•
81.	When was the first Bengue (syld in India ? E. J. (2)	
23.	A set of vectors containing the null vector is	
- 3, -	The set of vectors $X'^{\frac{1}{2}} = (2, 1, 4), X_2 = (-3, 2, -1), X_3 = (1, 3)$	27.
	(1) Linearly Independent (2) Linearly Dependent	
	(2) Encarty Dependent	
3.2.	(3) Both (1) and (2) (4) None of these	
24.	A bijective linear transformation is called	
	(1) Homomorphism (2) Monomorphism	28.
	and the second	
	(3) Epimorphism (4) Isomorphism	
	(3) Epimorphism (4) Isomorphism	
	(3) 1. (3) 1. (3) 1. (4) a y is	
25.	The matrix $\begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$ is	
	$-\sin \alpha_{\text{res}} \cos \alpha_{\text{res}} + A \text{ mad}$ written encore s at A H	29.
	Equal to price index purpose	
	(1) Unitary (2) Skew-symmetric	
	(h) Slow Hermitter II (h)	•
	(3) Orthogonal (4) Hermitian	

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Set-X Code-C 1. . Question Questions No. 2 $\sqrt{2}$ The characteristic roots of the matrix $|\sqrt{2}|$ 26. are 1 (1) 2, 1 (2) 0, 3 (3) 1, $\sqrt{2}$ (4) 2, $\sqrt{2}$ The set of vectors $X_1 = (2, 1, 4), X_2 = (-3, 2, -1), X_3 = (1, -3, -2)$ 27. (1) Linearly Independent, and Data and Angenity Dependents Bi (1) Linearly dependent (2) Linearly Independent (3) Both (1) and (2) (4) None of these The product of the eigenvalues of the matrix A is equal to 28. (1) |A| (2) Trace of A (3) 1 (4) 0 29. If A is a square matrix, then A + A', AA' and A'A are (1) Symmetric (2) Skew symmetric (3) Hermitian (4) Skew Hermitian PG-EE-2022 (Statistics) Code-C

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Question No.	anoitee Questions	No.
30.	If A is an orthogonal matrix, then	
	(1) $ \mathbf{A} = 0$ (2) $ \mathbf{A} = \pm 1^{\text{over surf}}$ (1)	
	(3) $ A = 1$, lest tin U (1) (4) $ A ^2 = 1$ (2) (3)	
31.	When was the first census held in India?	
	(1) 1870 (2) 1871 (1)	
	(3) 1872 (4) 1874 (5)	
32.	Which of the following is not a division of NSSO?	9.6
41	(1) Coordination and publication Division	
	(2) Field Data Division (1) (2) Plane: tastano (8)	
1	(3) Data Processing Division de tra la noticellos edit albai al	87.
42.	(4) Survey Design and Research Design	
33.	The purchasing power of money is	
BB	(1) Reciprocal of price index number	
	(2) Equal to price index number	
	(3) Twice the price index number	
	(4) Unequal to price index number	

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35. V	Fisher's ideal formula does (1) Time reversal test (3) Factor reversal test Which index number satisfic	not satisfy : (2) Circular test (4) Unit test	(1)
35. V	 Time reversal test Factor reversal test 	(2) Circular test	(1)
35. V	(3) Factor reversal test	0.03	
35. V		(4) Unit test	
The per	Which index number satisfi		(3)
(es factor reversal test ?	21 177
Provide State	1) Paasche's Index	(2) Laspeyre's Index	(1) - (2)
(i	3) Fisher's Ideal Index	(4) Walsh Price Index	
36. II	n a chain base method, the	base period is	
(1	1) Fixed	(2) Not fixed	
(3	3) Constant	(4) Zero	(8)
37. Ir	n India, the collection of vit	al statistics started for first ti	ime in
(1	1) 720 mage(1 ₆	(2) 1886	(1)
(3	3) 1969	(4) 2014	
38. T	he death rate obtained for a	segment of a population is ki	nown as
(1) Specific death rate	(2) Crude death rate	(8)
(3)		(4) Vital index	(8)
C DD acco	2 (Statistics) Code-C	1000 100 100 100 100 100 100 100 100 10	

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Question No.	anoid and Questions	Question No.
39.	The elasticity for demand of the durable goods is	
	(1) Zero (2) (2) Equal to unity ibeld	(1)
	(3) Greater than unity (4) Less than unity	(8)
40.	When the price of a product falls by 10% and its demand r then the elasticity of demand is	rises by 30%
18.	(1) 13 (2) 3 (2) (2) (2) (2) (3)	(fyouth and
	(3) 10 (4) 30 (4) 30 (4) (4) 10 (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	
41.	The word 'Statistics' is used as	45. Th
	(1) Singular (2) Plural $MH = MD = MA$	·
49.	(3) Singular and Plural (4) None of these	
42.	In an exclusive type distribution, the limits excluded are :	46 Fo
ot mea.	(1) Lower limits	31
50.	(2) Upper limits	(D)
	(3) Either of the lower or upper limits	(8)
	(4) Lower and upper limits both	

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10.

With the help of the Ogive curve, one can determine :
(1) Median (2) (2) Deciles (2)
(3) Percentiles (4) All the above
The most appropriate diagram to represent the data relating to t
monthly expenditure on different items by a family is :
(1) Histogram (2) Pie Chart
(3) Frequency Polygon (4) Line graph
The correct relationship between A.M., G.M. and H.M. is :
(1) A.M. = G.M. = H.M. (2) $G.M. \ge A.M. \ge H.M.$
(3) $H.M. \ge G.M. \ge A.M.$ (4) $A.M. \ge G.M. \ge H.M.$
For a group of 100 candidates, the mean was found to be 40. Later it was discovered that a value 45 was misread as 54. The correct m
is : death rate obtained for a segment of a population of the popu
(1) 40.50 death rate (2) 39.85
(3) 39.80 (4) 39.91
(4) Lower and typer limits both

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	Code-C
Question No.	Questions
47.	The correct formula for variance of 'n' sample observations $x_1, x_2,, x_n$ is
	(1) $\frac{1}{n-1} \sum_{i} (x_i - \overline{x})^2$ (2) $\frac{1}{n-1} \sum_{i} (x_i^2 - \overline{x}^2)$ (1)
	(3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$
48.	Average wages of workers of a factory are Rs. 550 per month and the standard deviation of wages is 110. The coefficient of variation is
	(1) 30% (2) 15%
66.	(3) 500% (4) 20%
49.	In case of positive skewed distribution, the relation between mean, median
et sor [9	and mode is: 1 U bas [1, 1] J to set the values of L [1, P] and U [1
	(1) Median > Mean > Mode (2) Mean > Median > Mode
37	(3) Mean = Median = Mode (4) 2 Mean = 1.5 Median = Mode
50.	The idea of product moment correlation was given by :
	(1) R.A. Fisher (2) Sir Francis Galton
	(3) Karl Pearson (4) Spearman

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Question No.	Constant Questions
51.	$\lim_{n\to\infty} n^{\frac{1}{n}} \text{ is equal to}$
a.	(3) e (4) Log 2
52.	The set $\{(-1)^n n\}$ is
opth st variatie	(1) Bounded below but not above
	(2) Bounded above but not below
18.	(3) Bounded
atben n	(4) Neither bounded below nor bounded above
53.	If $f(x) = \frac{1}{x^2}$ on [1, 4], then the values of L [f, P] and U [f, P] for the partition P = {1, 2, 3, 4} of [1, 4] are
	(1) $\frac{9}{144}, \frac{7}{36}$ (2) $\frac{61}{144}, \frac{49}{36}$
	(3) $\frac{13}{144}, \frac{9}{36}$ (4) None of these

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Question No.	anoitable Questions
54.	If $f: [a, b] \to R$ is a bounded function and $P, P' \in P$ [a, b] such that $P \subset P'$, then which of the following is true ?
	(1) $L(f, P') \ge L(f, P)$ (2) $U(f, P') \le U(f, P)$
	(3) $L(f, P') \le L(f, P)$ (4) Both (1) and (2) are true
55.	Every infinite bounded set of real numbers has a limit point. This result
	is known as many to be a made to be a many (0, 0) and to be a many of the second second second second second se
	(1) Heine-Borel Theorem (2) Cauchy I st theorem on limits
	(3) Cauchy 2 nd theorem on limits (4) Bolzano-Weierstrass theorem
56.	The series $\sum_{n=1}^{\infty} \cos\left(\frac{1}{n}\right)$ is constant solutions of the selection of the select
	(1) Convergent (2) Divergent
	(3) Oscillating finitely (4) Oscillating infinitely
57.	A set of values of decision variables which satisfies the linear constraint and non-negativity conditions of a LPP is called its
	(1) Unbounded solution (2) Optimum solution
	(3) Feasible solution (4) None of these

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Question No.	An anoitzeur Questions of Joh
61.	Standard error of the sample correlation coefficient 'r' is based on 'n paired values is :
	(1) $\frac{1+r^2}{\sqrt{n}}$ (2) $\frac{1+r^2}{n}$ (2) $\frac{1+r^2}{n}$ (2) (3)
x-x)8	(3) $\frac{1-r^2}{\sqrt{n}}$ and the mean all (4) $\frac{1+r^2}{\sqrt{n-1}}$ appeared 2.11 .33
62.	If the value of multiple correlation coefficient is near to 1, it leads to the conclusion that :
	(1) There is a lack of linear relationship
	(2) Linear relation is a good fit
	(3) There is a curvilinear relation
	(4) All of the above (2) (2) (3) (4) (4)
63.	Regression coefficient is independent of :
tieneb vi	(1) Origin d blog and z 200 (2) Scale d diddorff and 88
	(3) Both origin and scale (4) Neither origin nor scale
64.	The function $Y = a + bX + cX^2 + dX^3$ represents :
	(1) A hyperbola (2) An exponential curve
	(3) A parabola (4) Gompertz curve

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The mean deviation of the set of numbers 12, 6, 7, 3, 15, 10, 18, 5
is : - dy be the objective function, then multiple antific beningt
(1) 3.25 (2) 2.25
(3) 4.25 (4) 5.25
If 'X' is a random variable with its mean \overline{X} , then the expression E (X – \overline{X}) represents
(1) The variance of 'X' (2) Second Central moment
(3) Both (1) and (2) (4) The standard deviation of 'X'
If 'X' is a random variable having its probability density function (pdf) f (x), then $E\left(\frac{1}{X}\right)$ is called (1) Arithmetic Mean (2) First Quartile (3) Harmonic Mean (4) All of these
The Probability function $f(x)$, $-\infty < x < \infty$ is said to be probability densitient of the probability densities of the probability
(1) $\int_{-\infty}^{\infty} f(x) dx - 1 \neq 0$ (2) $\int_{-\infty}^{\infty} f(x) dx = 1$
(3) $\int_{0}^{\infty} f(x) dx = 1$ (4) $\int_{-\infty}^{\infty} f(x) dx = 0$ (2)

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Question No.		*ein	Ques	stions		No.
69.	Let X be a co	ontinuous 1	.v. with pdf		a toom at got	T2.
	f (x) =	a _x ;0 a;1 -ax+3a;2	9≤x≤1 ≤x≤2 2≤x≤3	i – P (A All of Lore	 (1) e¹e¹-3 (3) e¹-1 	
17.	No montente		(>3		S. Harris an	78.
a)oine 18	then the val	ue of 'a' is	modra eulour		n is given by	
	(1) 0.4	1- ²⁴	(2)	0.5	(I) e ¹⁴	
	(3) 0.3		(4)	0.1	AL-2 1 (2)	
70.	Let X be a ra	indom vari	able with the	e following	probability dist	ribution :
fire nois	x	-3	6	9	Which of the lo	•
	P(X = x)	<u>1</u> 6	$\frac{1}{2}$	$\frac{1}{3}$	X) 5.5 - (Xd + X 8 + A	
	The value of	f E (X ²) is		(a) All c	f the signs '	
9 9	(1) 43.5	the bars	(2)	45.37	anoh aboléo (ji	AUALO OT
	(3) 46.5	noltindinta	ch Lemitor (4)	43.4	be Quartile De	
71.	If $X \sim N$ () as	1, σ ²), the	n the stand	lard norm	al variate is	distribute
	(1) N (0, σ	2)	(2)) N (μ, σ ²)	1.1.1	
1. 1.				and prove the second		

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QuestionQuestions72.The moment generating function of Poisson distribution is(1)
$$e^{1}(e^{1}-1)$$
(2) $e^{t(e^{1}-1)}$ (3) $e^{t}-1$ (4) $e^{\lambda(1-e^{1})}$ 73.The distribution function of the exponential distribution with parameter λ' is given by(1) $e^{-\lambda x}$ (2) $e^{-\lambda x}-1$ (3) $1-e^{-\lambda x}$ (4) $-e^{-\lambda x}$ 74.Which of the following is the mode of the rectangular distribution with parameter A and B?(1) $\frac{A+B}{2}$ (2) $\frac{A-B}{2}$ (3) Mode does not exist(4) $A+B$ 75.The Quartile Deviation of the normal distribution is(1) $Q.D. = \frac{1}{2}\sigma$ (2) $Q.D. = \frac{2}{3}\sigma$ (3) $Q.D. = \frac{2}{5}\sigma$ (4) $Q.D. = \frac{3}{4}\sigma$ PG-EE-2022 (Statistics) Code-C

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Question No.	,acoline Questions	iestio No.
76.	If A and B are two independent events, then $P(\overline{A} \cap \overline{B})$ is equal to	.08
84.	(1) $P(\overline{A}) P(\overline{B})$ (2) $1 - P(A \cup B)$ (1)	
	(3) $[1 - P(A)] [1 - P(B)]$ (4) All of these (2)	•
77.	The moment generating function of the geometric distribution is	31.
85.	(1) $\left(\frac{a}{1-q}e^{t}\right)$ (2) $\left(\frac{a}{1-q}e^{t}\right)$ (3) $\frac{a}{1-q}e^{t}$ (3) $\frac{a}{1-q}e^{t}$ (4) $\frac{b}{2}e^{t}$ (5) $\frac{b}{2}e^{t}$ (7)	uica
	(3) $\frac{p}{1-qe^{t}}$ (4) $\frac{q}{1-pe^{t}}$ (5) (6) $\frac{p}{1-qe^{t}}$ (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7	es
78.	Which of the following is true ?	
	(1) $E(aX + b) = a E(X)$ (2) $E(aX + bY) = aE(X) + bY = $	b
	(3) $E(aX + bY) = aE(X) + bE(Y)$ (4) All of the above	
79.	Two dice are rolled by two players A and B. A throws 10, the proba that B throws more than A is	bility
	(1) $\frac{1}{12}$ (2) $\frac{1}{6}$ (1)	•
	(3) $\frac{1}{18}$ (4) $\frac{1}{16}$	

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Question No.	· estions · · · · · · · · · · · · · · · · · · ·
80.	The mean of Binomial distribution B (n, p) is (1) np ($\mathbf{a} \cup \mathbf{A}$) 1 - 1 (\mathbf{a}) (2) np - 1 (\mathbf{a}) (4) (4) 1 - np - 1 (\mathbf{A}) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4
81.	The mathematical expression for continuity of a function is (1) $\lim_{x \to c} f(x) = f(c), \forall c \in [a, b]$ (2) $\lim_{x \to c} f(x) = f(c), \forall c \in (a, b)$ (3) $\lim_{x \to c} f(x) = f(c), \forall c \in [a, b)$ (4) $\lim_{x \to c_{\lambda}} f(x) = f(c), \forall c \in (a, b]$
82.	For $2x + 3y = \sin x$, then value of $\frac{dy}{dx}$ is
d	(1) $\frac{\cos x - 2}{3(d + X_B)}$ (2) $\frac{\cos x - 2}{2(2) d_B} = (d + X_B) d$ (1)
	(3) $\frac{\tan x - 3}{3}$ (4) $\frac{\sin x - 2}{3}$ (7) (6)
83.	If $x = 6 \sin^{-1} 2t$ and $y = \frac{1}{\sqrt{4-t^2}}$, then $\frac{dy}{dx}$ is
	(1) $\frac{t}{1-4t^2}$ $\frac{1}{6}$ (2) $-\frac{3}{1-4t^2}$ $\frac{1}{51}$ (1)
	(3) $\frac{t}{1-42t^2}$ $\frac{1}{21}$ (b) $(4) \frac{1}{3(1-4t^2)}$ $\frac{1}{81}$ (c)

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(23)

uestion No.	Questions
87.	The name of the property $\int_{a}^{b} f(x) dx = \int_{b}^{a} f(x) dx$ is
	(1) Reverse integral property (2) Adding intervals property
24.	(3) Zero interval property (4) Adding integrand property
88.	At the point $x = 0$, the function $f(x) = x , -1 \le x \le 1$ is
dition	(1) Continuous and differentiable
	(2) Non-continuous and differentiable (2) X X Y (2) (2) (1)
	(3) Continuous and non-differentiable $3 \times 1 \times 0 < 0$ (3) 1×0
	(4) Neither continuous nor differentiable
89.	The function $f(x) = \frac{4-x^2}{4x-x^3}$ is
88.	(1) Discontinuous at one point
	(2) Discontinuous at exactly two points
	(3) Discontinuous at exactly three points
	(4) Continuous at all points $\overline{31}$ (3) $\overline{31}$ (3) $\overline{31}$ (3)

(24) (28)

F

Code-(Code-C
Question No.	anoitesu Questions	Question No.
90.	CD-ROM stands for the integral $\int_{1}^{2} \frac{1}{\sqrt{x^{2}-1}} dx$ converges to (1) Compactable Read Only Memory	94.
	(2) Compact Data Head Only Memory (1)	· · ·
	(3) Compactable Disk Read Only Memory	
91.	Interpolation provides good estimates of missing values if if :	and only
decimal	 (1) The change of values is consistent (2) The series does not refer to abnormal periods 	95.
	 (3) The arguments are equidistant (4) All of the above 	
92.	The third difference of a cubic $\Delta^3 y$ function are	96.
	(1) Constant and (2) (2) Non constant (1)	
	(3) Variables (4) None of the above (6)) Rénearth
93.	Who is the father of Computer ? and at your trothods doin W	
	(1) Allan Turing (2) Charles Babbage	Florencios
	(3) Simur Cary (4) Augusta Adaming (8))

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Question No.	encitage Questions	Adestion No.
94.	CD-ROM stands for	
1. T	(1) Compactable Read Only Memory	30.
0	(2) Compact Data Read Only Memory	
C	(3) Compactable Disk Read Only Memory	
and only A		91.
95.	Which of the following is the binary equivalent of the number 35? (1) 10001 (2) 100101	decima
	(3) 100011 (4) 101001 (b)	
96.	What is unit of information ? A plane a lo equetellib built edl	92.
9. 1	(1) Bit the transmission of (2) Bite transmission (1)	
	(3) Gram is end to enove (4) (4) Hertz seldens (8)	
97.	Which shortcut key is used, to find a particular word in document?	a word
	(1) CTRL+S (2) CTRL+F (1)	J.
4	(3) $CTRL + R$ (4) $CTRL + Y$ (5)	

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F

Question No.	• Questions					
98.	VGA is					
	(1) Video Graphics Array (2) Visual Graphics Array					
	(3) Volatile Graphics Array (4) Video Graphics Adapter					
99.	What does USB stand for ?					
	(1) Universal Signal Board (2) Universal Signal Bus					
	(3) Universal Serial Bus (4) Universal Serial Board					
100.	Which of the following is the correct abbreviation of COMPUTER ?					
	(1) Commonly Occupied Machines used in Technical and Educatio Research					
	(2) Commonly Operated Machines used in Technical and Environmenta Research					
	(3) Commonly Oriented Machines used in Technical and Educatio Research					
	(4) Commonly Operated Machines used in Technical and Educationa Research					

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(Total No. of printed pages : 28)

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(PG-EE-2022)

Code

STATISTICS

Sr. No. 10064

Time: 1¹/₄ Hours

Total Questions : 100 Max. Marks : 100

Roll No. ______ (in figure)______ (in words)

Name :

Mother's Name :

_ Date of Examination : _____

____ Father's Name :

(Signature of the candidate)

(Signature of the Invigilator)

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- Keeping in view the transparency of the examination system, carbonless OM 3. Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- Question Booklet along with answer key of all the A,B,C and D code will be 4. uploaded on the university website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing within 24 hours of uploading the same on the University Website. Thereafter, no complaint in any case, will be considered.
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Set–X Code–D

uestion No.	No.	Questions
1.	The	mathematical expression for continuity of a function is
	(1)	$\lim_{x \to c} f(x) = f(c), \forall c \in [a, b] \qquad (2) \lim_{x \to c} f(x) = f(c), \forall c \in (a, b)$
	(3)	$\lim_{x \to c} f(x) = f(c), \forall c \in [a, b) \qquad (4) \lim_{x \to c} f(x) = f(c), \forall c \in (a, b]$
2.	For	$2x + 3y = \sin x$, then value of $\frac{dy}{dx}$ is
3	(1)	$\frac{\cos x - 2}{3} \qquad (2) \frac{\cos x - 2}{2}$
	(3)	$\frac{\tan x - 3}{3}$ (4) $\frac{\sin x - 2}{3}$
3.	If x =	= 6 sin ⁻¹ 2t and y = $\frac{1}{\sqrt{4-t^2}}$, then $\frac{dy}{dx}$ is
	(1)	$\frac{t}{1-4t^2}$ (2) $-\frac{3}{1-4t^2}$
	(3)	$\frac{t}{1-42 t^2}$ (4) $\frac{1}{3(1-4t^2)}$

(1)

(2)

Question No.	in in it.	Questions	estion No.
7.	The	e name of the property $\int_{a}^{b} f(x) dx = \int_{b}^{a} f(x) dx$ is	.0
	(1)	Reverse integral property (2) Adding intervals property	
	(3)	Zero interval property (4) Adding integrand property	
8.	At t	the point $x = 0$, the function $f(x) = x , -1 \le x \le 1$ is	.1
		$1781 (2) \qquad 0.781 (3)$	
•	(1)	Continuous and differentiable	
	(2)	Non-continuous and differentiable	12.
	(3)	Continuous and non-differentiable	
	(4)	Neither continuous nor differentiable	
9.	The	function f (x) = $\frac{4 - x^2}{4x - x^3}$ is	
		(4) Survey Design and Research Design $x - x^{4}$	
	(1)	Discontinuous at one point	0.1
	(2)	Discontinuous at exactly two points	13.
	(3)	Discontinuous et anotal de la constance a la constance de la const	
	(0)	Discontinuous at exactly three points	
	(4)	Continuous at all points	
		(4) Unequal to price index number	

Question No.	Questions	estion No.
10.	The integral $\int_{1}^{2} \frac{1}{\sqrt{x^2 - 1}} dx$ converges to	7.
a	(1) 2 virgens elementarization (2) $(2) = 1$ (2) $(2) = 1$ (1)	
	(3) Zero interval property ${}^{6}(4)$, ${}^{(4)}(4)$, adding integrand property ${}^{0}(6)$	
11.	When was the first census held in India ?	.8
- aries	(1) 1870 (2) 1871	
forth	(3) 1872 (4) 1874	
12.	Which of the following is not a division of NSSO ?	
(2) 1	(1) Coordination and publication Division	
	(2) Field Data Division elder operation around the real sector (2)	
1.0.15	(3) Data Processing Division	
	(4) Survey Design and Research Design	.0
13.	The purchasing power of money is	
	(1) Reciprocal of price index number	
0	(2) Equal to price index number	
	(3) Twice the price index number	
(3)	(4) Unequal to price index number	5

(4) (8)

- Statestal

Set-X)	Set-X Code-I
Question No.	Questions	Question No.
14.	Fisher's ideal formula does not satisfy :	19. The
	(1) Time reversal test (2) Circular test	
	(3) Factor reversal test (4) Unit test	(3)
15.	Which index number satisfies factor reversal test ?	
24.	(1) Paasche's Index (2) Laspeyre's Index	the
	(3) Fisher's Ideal Index (4) Walsh Price Index	
16.	In a chain base method, the base period is	18 18
26.	(1) Fixed (2) Not fixed	
	(3) Constant (2) (4) Zero	(1)
17.	In India, the collection of vital statistics started for first tim	ne in
	(1) 720 (2) 1886	6)
f dt abie 28	(3) 1969 (4) 2014	
18.	The death rate obtained for a segment of a population is known	own as
	(1) Specific lead	spont
	(3) Standardized rate (4) Vital index	and X
) All of the above	

(5)

Questions	şuestion No.
The elasticity for demand of the durable goods is	.61
(1) Zero (2) Equal to unity (1)	
(3) Greater than unity (4) Less than unity (3)	
When the price of a product falls by 10% and its demand rise	s by 30%
then the elasticity of demand is	10.01
(1) 13 (2) 3	
$(3) 10 \qquad (4) 30 \qquad (5)$	
Standard error of the sample correlation coefficient 'r' is has	ed on 'n
paired values is : Not (2) best? (1)	
(1) $\frac{1+r^2}{\sqrt{n}}$ (2) $\frac{1+r^2}{n}$	
(3) $\frac{1-r^2}{\sqrt{n}}$ (4) $\frac{1+r^2}{\sqrt{n-1}}$	17.
If the value of multiple correlation coefficient is near to 1 it lea	de to the
conclusion that :	
(1) There is a lack of linear relationship	18.
(2) Linear relation is a good fit	
(3) There is a curvilinear relation	
(4) All of the above	
	The elasticity for demand of the durable goods is (1) Zero (2) Equal to unity (3) Greater than unity (4) Less than unity When the price of a product falls by 10% and its demand rises then the elasticity of demand is (1) 13 (2) 3 (3) 10 (4) 30 Standard error of the sample correlation coefficient 'r' is bas paired values is : (1) $\frac{1+r^2}{\sqrt{n}}$ (2) $\frac{1+r^2}{n}$ (3) $\frac{1-r^2}{\sqrt{n}}$ (4) $\frac{1+r^2}{\sqrt{n-1}}$ If the value of multiple correlation coefficient is near to 1, it lead conclusion that : (1) There is a lack of linear relationship (2) Linear relation is a good fit (3) There is a curvilinear relation

Set-X Code-D

(6)

Question No.		Betions•	Quest	tions	
23.	Regr	ession coefficient is indep	pender	nt of :	27.
F	(1)	Origin	(2)	Scale I and tool (bo)	
	(3)	Both origin and scale	(4)	Neither origin nor scale	
24.	The	function $Y = a + bX + cX^2$	$+ dX^3$	represents :	1
V densit				The Probability function f	
0		A hyperbola		An exponential curve	
(3	(3)	A parabola	(4)	Gompertz curve	
25.		$1 = X_{D}(\mathbf{X}) + (\mathbf{X})^{-1}$		$(1) \int f(x) \mathrm{d} x - I \neq 0$	10, 18, 5
25.		mean deviation of the		Gompertz curve numbers 12, 6, 7, 3, 15,	10, 18, 5
25.	The is :	mean deviation of the	set of	numbers 12, 6, 7, 3, 15,	10, 18, 5
25.	The is :	mean deviation of the	set of (2)	numbers 12, 6, 7, 3, 15, 2.25 5.25	10, 18, 5
	The is: (1) (3)	mean deviation of the 3.25 4.25	set of (2) (4)	numbers 12, 6, 7, 3, 15, 2.25 5.25	29.
25.	The is : (1) (3) If 'X'	mean deviation of the 3.25 4.25	(2) (4)	numbers 12, 6, 7, 3, 15, 2.25 5.25	29.
	The is : (1) (3) If 'X'	mean deviation of the 3.25 4.25 is a random variable with	(2) (4)	numbers 12, 6, 7, 3, 15, 2.25 5.25 ean \overline{X} , then the expression	29.

(7)

(I-aho)

Set-X Code-D

Question No.	Questions	Code-I
27.	If 'X' is a random variable having its probability density (1)	function
	(pdf) f (x), then E $\left(\frac{1}{X}\right)$ is called (1)	
20.	(1) Arithmetic Mean (2) First Quartile	
	(3) Harmonic Mean (4) All of these	24.
28.	The Probability function f (x), $-\infty < x < \infty$ is said to be probabili function if :	ty density
21	(1) $\int_{-\infty}^{\infty} f(x) dx - 1 \neq 0$ (2) $\int_{-\infty}^{\infty} f(x) dx = 1$	paced on
10, 18,	(3) $\int_{0}^{\infty} f(x) dx = 1$ (4) $\int_{-\infty}^{\infty} f(x) dx = 0$ at	35.
29.	Let X be a continuous r.v. with pdf	
92	$f(x) = \begin{bmatrix} a_x & ; \ 0 \le x \le 1 \\ a & ; \ 1 \le x \le 2 \end{bmatrix} $ (8)	
E(X-	$\begin{vmatrix} -ax + 3a; 2 \le x \le 3 \\ 0 \\ x > 3 \end{vmatrix}$	26.
	then the value of 'a' is a speed of Z to construe of T (1)	
	(1) 0.4 (2) 0.5 (3) bra (1) d off (6)	
	(3) 0.3 (4) 0.1	

PG-EE-2022 (Statistics) Code-D

(8)

Question No.			anoites Qu	estions		testion No.
30.	Let X be a r	andom var	iable with t	he following	g probability di	
	distance of				and the office of	
	X	- 3	6	9	Allan Turing	(1)
1	P(X = x)	$\frac{1}{6}$	$\frac{1}{2}$	$(4) \frac{1}{3}$	Simm Cary	(8)
38.	The value o	of E (X ²) is	Membry		ROM stands f	
	(1) 43.5	tile Gearchi				
39.	(3) 46.5				Compactable	
31.	Intomalat		CLERKAR PHI	DAL LINATO	rsal Stenal Ha	
	if:				nissing values	(fa)
iecime	if: add to insl	ersal Sena Byinpé, yr			issing values	(fa)
	if: (1) The cha	ange of valu		stent	in the real last	Sa.as W TER.as pri tod Educati
	 if: (1) The cha (2) The ser (3) The arg 	ange of valu ries does no guments are	ues is consis	stent bnormal pe	riods	(1)
	 if: (1) The cha (2) The ser (3) The arg (4) All of the 	ange of valu ries does no guments are	ues is consis ot refer to al e equidistan	stent bnormal pe	riods	(1) (*) (*) (1) (*) (*) (*) (*) (*) (*) (*) (*) (*) (*
	 if: (1) The cha (2) The ser (3) The arg (4) All of the 	ange of valu ries does no guments are ne above	ues is consis ot refer to al e equidistan	stent bnormal pe it	riods	(1) W Edication (1) W Edication W Edication
	 if: (1) The cha (2) The ser (3) The arg (4) All of the The third dim 	ange of valu ries does no guments are ne above fference of	ues is consis ot refer to al e equidistan a cubic ∆³y	stent bnormal pe at function ar	riods	(1) W Eddeed (1) W Eddeed (1) (2) (2) (3) (4) (5) (5) (5) (6) (6) (7) (7) (7) (7) (7) (7) (7) (7

Question No.	anoite Questions	uestion No.
33.	Who is the father of Computer ?	80.
	(1) Allan Turing (2) Charles Babbage	
	(3) Simur Cary (4) Augusta Adaming	
34.	CD-ROM stands for	
8. 7	(1) Compactable Read Only Memory	
1	(2) Compact Data Read Only Memory	
1	(3) Compactable Disk Read Only Memory	
nd only	(4) Compact Disk Read Only Memory	81.
35.	Which of the following is the binary equivalent of the d	lecimal
0. 11	(1) The change of values is consistent ? 55 redmun	
	(2) The series does not refer to abnormal periods 10001 (2)	
	(3) 100011 (4) 101001 (8)	
36.	What is unit of information ?	· · · ·
	(1) Bit Δ^2 y function are $Bite$ (2) Bite (1)	32.
	(3) Gram ^{Instance} (2) (4) Hertz ^{Instance} (1)	
	(3) Variables $1.0 (4)$ None of the above $8.0 (6)$	

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Question No.	anoitage Questions	Question No.
37.	Which shortcut key is used, to find a particular word in document?	a word
	(1) $CTRL + S$ (2) $CTRL + F$ (3) $CTRL + R$ (4) $CTRL + Y$	
38.	VGA is	
45.	 (1) Video Graphics Array (2) Visual Graphics Array (3) Volatile Graphics Array (4) Video Graphics Adapter 	s rea£⊉
39.	What does USB stand for ?(1) Universal Signal Board(2) Universal Signal Bus(3) Universal Serial Bus(4) Universal Serial Board	innia isorem
40.	 Which of the following is the correct abbreviation of COMPUTER (1) Commonly Occupied Machines used in Technical and Ed Research (2) Commonly Operated Machines used in Technical and Environ Research 	ucation
	(3) Commonly Oriented Machines used in Technical and Ed Research	ucation
	(4) Commonly Operated Machines used in Technical and Educ Research	cational

PG-EE-2022 (Statistics) Code-D

Code-D Question Questions No. aronon 41. $lim n^n$ is equal to $n \rightarrow \infty$ (1) 1 (2) 0 (3) e (4) Log 2 The set $\{(-1)^n n\}$ is nerve (2) years endowing the object (1) 42. (1) Bounded below but not above (2) Bounded above but not below (3) Bounded (4) Neither bounded below nor bounded above If $f(x) = \frac{1}{x^2}$ on [1, 4], then the values of L [f, P] and U [f, P] for the 43. partition $P = \{1, 2, 3, 4\}$ of [1, 4] are belowing O vince (2) (1) $\frac{9}{144}, \frac{7}{36}$ (2) $\frac{61}{144}, \frac{49}{36}$ (3) $\frac{13}{144}, \frac{9}{36}$ (4) None of these (4) PG-EE-2022 (Statistics) Code-D

Set-X

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Set-X
Code-D

Question No.	Questions	ode-]
44.	If $f: [a, b] \rightarrow R$ is a bounded function and P, P' \in P [a, b] such that	D - D
51, Je	then which of the following is true ?	ICI
	(1) $L(f, P') \ge L(f, P)$ (2) $U(f, P') \le U(f, P)$	
•	(3) $L(f, P') \le L(f, P)$ (4) Both (1) and (2) are true	
45.	Every infinite bounded set of real numbers has a limit point. This	resul
	is known as (0.3) (0.0)	
	(1) Heine-Borel Theorem (2) Cauchy I st theorem on li	mits
12	(3) Cauchy 2 nd theorem on limits (4) Bolzano-Weierstrass the	eorem
46.	The series $\sum_{n=1}^{\infty} \cos\left(\frac{1}{n}\right)^{\text{of Rienegeb-non belles at notifies placed A}}$ is	49.
	(1) Convergent (2) Divergent	
	(3) Oscillating finitely (4) Oscillating infinitely	
47.	A set of values of decision variables which satisfies the linear const	rainta
	and non-negativity conditions of a LPP is called its	.03
	(1) Unbounded solution (2) Optimum solution	
	(3) Feasible solution (4) None of these	

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Code-D

Set-X Code-D

Question No.	Questions	Question No.
48.	The feasible region for a LPP is shown shaded in the figure given	below. If
	$\mathbf{Z}=3\mathbf{x}-4\mathbf{y}$ be the objective function, then minimum of \mathbf{Z} occurs	at
	(1) $L(f, P) \ge L(f, P)$ (4, 10) (4, 10) (7, 3) $L \le (7, 3) L$ (1)	
	Feasible $(6, 8)$ Region $(6, 5)$	
lieer ei	Every mfinite bounded set of eal numbers has a limit point. Th	
	$(0,0) (5 0) \qquad $	
etimil	(1) $(0, 0)$ (2) $(0, 8)$	
theorem	(3) (5, 0) (5, 0) (4) (4) (4, 10) (5, 0) (8)	
49.	A basic solution is called non-degenerate if (1) All the basic variables are zero	46.
.3.	(2) None of the basic variable is zero	
	(3) At least one of the basic variable is zero	
	(4) Atmost one of the basic variable is zero	
50.	Linear Programming Problem (LPP) involving more than two can be solved by	variable
	(1) Graphical method (2) Matrix minima method	
	(3) Hungarian method (4) Simplex method (8)	

(14)

Question No.	Questions	
51.	The order and degree of the differential equation $\frac{d^2y}{dx^2} + \sqrt{1+dx^2}$	$\overline{\left(\frac{\mathrm{d}y}{\mathrm{d}x}\right)^3} = 0$
	(1) P. Q are functions of x only	
	(1) First order, second degree	
58.	(2) First order, first degree	andition
	(3) Second degree, second order	
	(4) Second order, first degree	55.
52.	The n th order ordinary linear homogeneous differential	equation
68.	has which of the following statement is true $\frac{1}{1+\chi}$ (1)	•
	(1) n-singular solutions (2) no singular solution	
	(3) one singular solution (4) $(n-1)$ singular solution	
d ot 0 =		
<u>d ot 0 =</u> 53.	The differential equation $\frac{d^2y}{dx^2} + \frac{dy}{dx} - 2y = 0$ has the solution	di of it:
<u>53.</u>	The differential equation $\frac{d^2y}{dx^2} + \frac{dy}{dx} - 2y = 0$ has the solution (1) $y = c_1 e^{-2x} + c_2 e^x$ (2) $y = c e^{-2x}$	ch cf it.

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Code-D

Question No.	anoltzenQuestions No.
54.	The equation $\frac{dy}{dx} + Py = Q$ is linear differential equation of first order
	if .
	(1) P, Q are functions of x only
	(2) P, Q are the functions of y only
	(3) P, Q are the functions of x and y (2)
	(4) P, Q are the functions of none of x and y good boood (8)
55.	The integrating factor for the differential equation
equation e1	$(x + 1) \frac{dy}{dx} - y = e^{3x} (x + 1)^2$ is
•	(1) $\frac{1}{x+1}$ (2) $x+1$
	(a) $\frac{1}{x^2+1}$ (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c
56.	The necessary condition for the equation $M(x, y) dx + N(x, y) dy = 0$ to be
59.	exact is log add asd 9 TYS is to the next of a site of the solid of th
	(1) $\frac{\partial N}{\partial y} = \frac{\partial M}{\partial x}$ (2) $\frac{\partial N}{\partial y} = -\frac{\partial M}{\partial x}$
	(3) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$ (4) $\frac{\partial M}{\partial y} = -\frac{\partial N}{\partial x}$ (5)

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uestion No.	Questions	
57.	The differential equation derived from $y = A e^{2x} + B e^{-2x}$; A and	B are
a result	constants has the order	60.
	(1) 3 (2) 1 ·····	
8	(1) Henne-Borel theorem (2) Cauchy 2^{n} theorem (2) 4 (4)	
7.8	(a) "Squeeze principle (4) Labbiliz z rule	
58.	The ordinary differential equation $x \frac{dy}{dx} - y = 2x^2$ with initial correct y (0) = 0 has	ndition
	(1) No solution (2) A unique solution	
is ged 66.	(3) Two distinct solutions (4) An infinite number of solution	ons
59.	Which of the following statement is true ?	•
	(1) $C_1 - Z_2 \ge 0$ (2) $C_1 + Z_2 \ge 0$	
	(1) The set Q of rational numbers is neighbourhood of each points	n of its
	(2) The set R of real numbers is neighbourhood of each of its point of the set R of real numbers is neighbourhood of each of its point of the set R	.83 ints
67.	(3) The set N of natural numbers is neighbourhood of each points	n of its
	(8) Integer linear programming problem	·
	(4) All the above statements are true	
•	(4) Integer non-bnear programming problem	

58 -	1	2	
1-9	200		

Question No.	Questions	Naap DM
60.	If $\lim_{n \to \infty} a_n^{\frac{1}{n}} = \lim_{n \to \infty} \frac{a_n + 1}{a_n}$ provided that the limit on RHS exists. This re-	esult
	is known as (2) 8 (1)	
	(1) Heine-Borel theorem (2) Cauchy 2 nd theorem on limits	
	(3) Squeeze principle (4) Leibnitz's rule	
61.	The coefficient of slack variable in the objective function is	.86
	(1) $-M$ (2) M	
01.	(1) No solution (1) (2) A unique solution (1) (3) (6)	
62. ⁸⁰⁰	For maximization LPP, the Simplex method is terminated whe values	n al
62. ⁸²⁰	which of the following statement is true?	n al .ea
	values	
eti lo d 63.	values (1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$ (3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$ The assignment problem is	
eti lo d 63.	values (1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$ (3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$ The assignment problem is	
63.	values (1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$ (3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$ The assignment problem is	
63.	values (1) $C_j - Z_j \ge 0$ (2) $C_j + Z_j \ge 0$ (3) $C_j - Z_j \le 0$ (4) $C_j + Z_j \le 0$ The assignment problem is (1) Non-linear programming problem (2) Dynamic programming problem	

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Question No.	enoise Questions
64.	The solution to a Transportation Problem (TP) with 'm' rows and 'n' columns is basic feasible if number of positive allocations are
	(1) $m + n$ (2) $m - n$ (1)
	(3) $m + n - 1$ (4) $m + n + 1$ (5)
65.	The bisection method is applied to compute a zero of the function $f(x) = x^4 - x^3 - x^2 - 4$ in the interval [1, 9]. The method converges to a solution after :
73.	 (1) First iteration (2) Three iterations (3) Two iterations (4) Five iterations
66.	If f (x) = x^2 , then the second order divided difference for the points x_0, x_1, x_2 will be
	(1) -1 (2) $-\frac{1}{x_1 - x_0}$
	(3) 1 (4) $\frac{1}{x_2 - x_1}$
67.	The order of convergence of Newton-Raphson method is
	(1) 2 is (2) (2) 3 relegation (1) (1) (2) (2) (3) (2) (3) (1)
	(3) 0 (4) (4) (4) (5) (6) (6)

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Question No.	Questions	restion No.
68.	The second approximation to a root of the equation $x^2 - x - 1$ interval (1, 2) by bisection method will be	
	(1) 1.9 $n - m$ (C) (2) 2.35 $n + m$ (
	(3) 1.75 (4) 1.5	
aaitaa	it bids the prost of a publication of healing a section of the	170 21.55
69.	The Newton-Raphson method is also called as	7
	(1) Tangent method (2) Secant method	98
	(3) Chord method (4) Diameter method	
70. staioq	Newton's formula for backward differences with usual notatio	ns is
		x
	(1) $y_x = y_0 + \sum_{r=1}^n {\binom{u}{r}} \Delta^r y_0$ (2) $y_x = y_0 + \sum_{r=1}^{n-1} {\binom{u+r}{r}}$	$\nabla^{r} y_{r}$
63.	(1) $y_x = y_0 + \sum_{r=1}^{n} {\binom{u}{r}} \Delta^r y_0$ (2) $y_x = y_0 + \sum_{r=1}^{n-1} {\binom{u+r}{r}}$ (3) $y_x = y_0 + \sum_{r=1}^{n} {\binom{u+r-1}{r}} \nabla^r y_0$ (4) None of these	0
71.	(3) $y_x = y_0 + \sum_{r=1}^n {u+r-1 \choose r} \nabla^r y_0$ (4) None of these	0
71.	(3) $y_x = y_0 + \sum_{r=1}^{n} {u+r-1 \choose r} \nabla^r y_0$ (4) None of these The word 'Statistics' is used as	() () 67. T

(20)

Question No.	Questions	nestion No.
72.	In an exclusive type distribution, the limits excluded are :	70
ct mean	it was discovered that a value 45 was misread as 54. The correct twas discovered that a value (1) it was discovered that a value (1)	
	(2) Upper limits 38.02 (2) (4) Operation (1)	
	(3) Either of the lower or upper limits	
X	(4) Lower and upper limits both	77.
73.	With the help of the Ogive curve, one can determine :	<u>.</u>
	(1) Median (2) Deciles	
anta an	(3) Percentiles (4) All the above	
74.	The most appropriate diagram to represent the data relating monthly expenditure on different items by a family is :	g to the
	(1) Histogram	
88 an, medi	(3) Frequency Polygon (4) Line graph	
75.	The correct relationship between A.M., G.M. and H.M. is :	79.
in a	(1) $A.M. = G.M. = H.M.$ (2) $G.M. \ge A.M. \ge H.M.$	
	(3) $H.M. \ge G.M. \ge A.M.$ (4) $A.M. \ge G.M. \ge H.M.$	

Question No.	encited Questions
76.	For a group of 100 candidates, the mean was found to be 40. Later on,
	it was discovered that a value 45 was misread as 54. The correct mean
	(1) Lower limits
	(1) 40.50 (2) 39.85 etimil regg() (2)
	(3) 39.80 (4) 39.91 (8)
77.	The correct formula for variance of 'n' sample observations x_1, x_2, \dots, x_n
	(4) Lower and upper limits both both body in such
	(1) $\frac{1}{n-1} \sum_{i} (x_i - \overline{x})^2$ (2) $\frac{1}{n-1} \sum_{i} (x_i^2 - \overline{x}^2)$
741.	(3) $\frac{1}{n} \sum_{i} (x_i - \overline{x})^2$ (4) $\frac{1}{n} \sum_{i} (x_i^2 - \overline{x}^2)$ (5) (6)
78.	Average wages of workers of a factory are Rs. 550 per month and
ig to the	the standard deviation of wages is 110. The coefficient of variation
	monthly expenditure on different items by a family is : si
	(1) 30% (2) 15% (1)
	(3) 500% (4) 20%
79.	In case of positive skewed distribution, the relation between mean, mediar
	75. The correct relationship between A.M. G.M. and si abom bna
	(1) Median > Mean > Mode (2) Mean > Median > Mode
	(3) Mean = Median = Mode (4) 2 Mean = 1.5 Median = Mode
	2022 (Statistics) Code-D

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Set-X Code-D

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Set-X Cede-I		Set-X Code-I
Question No.	anoitzeugQuestions	Question No.
80.	The idea of product moment correlation was given by :	84.
	(1) R.A. Fisher (2) Sir Francis Galton	
	(3) Karl Pearson (4) Spearman	
81.	For a subspace W of a finite dimensional vector space V (F), I	Dim $\left(\frac{V}{W}\right)$ is
	equal to cost of the matrix and the second s	
	(1) $Dim V - Dim W$ (2) $Dim V$	
99.	(3) $\operatorname{Dim} W$ (4) $\frac{\operatorname{Dim} V}{\operatorname{Dim} W}$	
00	The set of endered triplets (2. a. 0) of P3 has dimension	.88
82.	The set of ordered triplets $(a_1, a_2, 0)$ of \mathbb{R}^3 has dimension	
	(1) 1 (2) (2) 2	
91	TX - N (1, 5 ²), then the standard normal variate is	
	(3) 3 (4) 4 (8)	
83.	A set of vectors containing the null vector is	87.
92.	(1) Linearly Independent (2) Linearly Dependent	
	(3) Both (1) and (2) (4) None of these	
	(3) Both (1) and $(2)_{p \to q}$ (4) None of these (5)	

(23)

A-Joc Iebo()		Set-X Code-D
Question No.	Questions	Question No.
84.	A bijective linear transformation is called (1) Homomorphism (2) Monomorphism (3) Epimorphism (4) Isomorphism	rent mean)
(v)	(3) 39,80 (4) 39,91	
85.	The matrix $\begin{bmatrix} \cos \alpha & \sin \alpha \\ -\sin \alpha & \cos \alpha \end{bmatrix}$ is of large	and the second second
	(1) Unitary (2) Skew-symmetric	
	(3) Orthogonal (4) Hermitian	
86.	The characteristic roots of the matrix $\begin{bmatrix} 2 & \sqrt{2} \\ \sqrt{2} & 1 \end{bmatrix}$ are	58.82. ^{6449.9}
	(1) 2, 1 ² (2) (2) 0, 3 (1)	f varistion
	(3) 1, $\sqrt{2}$ (4) 2, $\sqrt{2}$ (2)	
87.	The set of vectors $X_1 = (2, 1, 4), X_2 = (-3, 2, -1), X_3 =$	(1, -3, -3)
79.	an assevited notation of an and a seven as a seven seven a sev	an, necisn
	(1) Linearly dependent (2) Linearly Independent	
	(3) Both (1) and (2) (4) None of these	4000e

PG-EE-2022 (Statistics) Code-D

(24)

Question No.	Questions	Auestion No.
88.	The product of the eigenvalues of the matrix A is equal to	98.
	(1) A (2) Trace of A	
	(1) $ A $ (2) Trace of A	
	(3) 1 (4) 0	
89.	If A is a square matrix, then A + A', AA' and A'A are	94.
98.	(1) Symmetric (2) Skew symmetric	
	(3) Hermitian (4) Skew Hermitian	
90.	If A is an orthogonal matrix, then	
39	(1) $ A = 0$ (2) $ A = \pm 1$	95.
	(3) $ \mathbf{A} = 1$ $\mathbf{a} = \frac{2}{\epsilon} = 0.0$ (2) (4) $ \mathbf{A} = -1$ $\mathbf{a} = \frac{1}{\epsilon} = 0.0$ (1)	
91.	If X ~ N (μ , σ^2), then the standard normal variate is dist	ributed
	(3) $Q.D. = \frac{2}{7}\sigma$ (4) $Q.D. = \frac{3}{7}\sigma$ (5)	
	(1) N (0, σ^2) (2) N (μ , σ^2)	
100.	(3) N (0, 1) (4) N (μ , 0)	.88
92.	The moment generating function of Poisson distribution is	
	(1) $e^{\lambda (e^t - 1)}$ (2) $e^{t (e^{\lambda} - 1)}$ (3) (4) (6)	
	(3) $e^{t} - 1$ (4) $e^{\lambda (1 - e^{t})}$	

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Set-X Dode-D		Set-X Code-D
Question No.	. enotited Questions	Question No.
93.	The distribution function of the exponential distribution with ' λ ' is given by (1) $e^{-\lambda x}$ (2) $e^{-\lambda x} - 1$ (3) $1 - e^{-\lambda x}$ (4) $-e^{-\lambda x}$	
94.	Which of the following is the mode of the rectangular distr	ibution with
86.	parameter A and B? (1) $\frac{A+B}{2}$ (2) $\frac{A-B}{2}$	
	(3) Mode does not exist (4) $A + B$	
95.	The Quartile Deviation of the normal distribution is (1) Q.D. = $\frac{1}{2}\sigma$ (2) Q.D. = $\frac{2}{3}\sigma$	(1)
tributed	(3) Q.D. $=\frac{2}{5}\sigma$ (4) Q.D. $=\frac{3}{4}\sigma$	91. If
96.	If A and B are two independent events, then $P(\overline{A} \cap \overline{B})$ is eq (1) $P(\overline{A}) P(\overline{B})$ (2) $1 - P(A \cup B)$	
	(3) $[1 - P(A)] [1 - P(B)]$ (4) All of these	(1) (8)
		ADDA STOT PU

PG-EE-2022 (Statistics) Code-D

(26)

Question No.	Questions
97.	The moment generating function of the geometric distribution is
	(1) $\frac{q}{1-q e^{t}}$ (2) $\frac{qp}{1-q e^{t}}$
•	(3) $\frac{p}{1-q e^{t}}$ (4) $\frac{q}{1-p e^{t}}$
98.	Which of the following is true ?
	(1) $E(aX + b) = a E(X)$ (2) $E(aX + bY) = aE(X) + b$
	(3) $E(aX + bY) = aE(X) + bE(Y)$ (4) All of the above
99.	Two dice are rolled by two players A and B. A throws 10, the probability
	that B throws more than A is
	(1) $\frac{1}{12}$ (2) $\frac{1}{6}$
	(3) $\frac{1}{18}$ (4) $\frac{1}{16}$
100.	The mean of Binomial distribution B (n, p) is
	(1) np (2) np - 1
	(3) $np + 1$ (4) $1 - np$

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(27)

11332213321344335332623372339121102331124412111134211434115431161131712318314193322014317123183141933221431221331322313241325123021311233234435443623373339233112333340434133421234334433452344335444<	С	B	Α	Q. NO.
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5 3 3 2 6 2 3 3 7 2 3 1 8 1 2 3 9 1 2 1 10 2 3 3 11 2 4 4 12 1 1 1 13 4 2 1 14 3 4 1 15 4 3 1 16 1 1 3 17 1 2 3 18 3 1 4 19 3 3 2 20 1 4 3 21 4 3 1 22 1 1 2 31 1 2 3 26 3 4 2 27 3 3 2 36	3	1	2	3
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8 1 2 3 9 1 2 1 10 2 3 3 11 2 4 4 12 1 1 1 13 4 2 1 14 3 4 1 15 4 3 1 16 1 1 3 17 1 2 3 18 3 1 4 19 3 3 2 20 1 4 3 18 3 1 2 21 4 3 1 22 1 1 2 23 1 3 2 24 1 3 4 25 1 2 3 26 3 4 2 31 1 2 3 32	3	3	2	6
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4041241333421234331444322		3	2	39
41 3 3 3 42 1 2 3 43 3 1 4 44 3 2 2				40
42 1 2 3 43 3 1 4 44 3 2 2				41
43 3 1 4 44 3 2 2				42
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	4	3	2	45
46 3 2 4				
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48 3 1 4	4	1	3	48
49 1 3 2	2	3	1	49

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Q. NO.	A	В	C	D
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89			3	
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96	2	2	1	4
97	2	2	2	3
98	1	11	1	3
99	3	1	3	2

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