OR2Find the root of the equation $x e^{x} = 2$ using Regula-Falsi method.L112UNIT-II3Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2L512OR4Using R-K method of 4 th order, solve $\frac{dy}{dx} = x^2 - y$, $y(0)=1$. Find $y(0.1)$ and $y(0.2)$.L312UNIT-III5Compute Karl Pearson and Bowley's coefficient of Skewness to the following data:L612OR6Two dice are thrown. Let A be the event that the sum of the point on the faces is 9.L112OR6Two dice are thrown. Let A be the event that the sum of the point on the faces is 9.L112OR	01 50 2M 2M 2M
(AUTONOMOUS) B.Tech II Year I Semester Regular Examinations May-2022 NUMERICAL METHODS, PROBABILITY & STATISTICS (Mechanical Engineering) Time: 3 hours (Answer all Five Units 5 x 12 = 60 Marks) UNIT-I 1 Find real root of the equation $3x = e^x$ by Bisection method. 1 12 1 Find real root of the equation $x e^x = 2$ using Regula-Falsi method. 1 12 1 Find the root of the equation $x e^x = 2$ using Regula-Falsi method. 1 12 1 Find the root of the equation $x e^x = 2$ using Regula-Falsi method. 1 12 1 Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2 L5 12 12 for the D.E $y^{11} + xy = 0$; $y(0) = 1$, $y^1(0) = 1/2$. 13 Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2 L5 12 14 Using R-K method of 4 th order, solve $\frac{dy}{dx} = x^2 - y$, $y(0)=1$. Find $y(0.1)$ and $y(0.2)$. 15 Compute Karl Pearson and Bowley's coefficient of Skewness to the following data: 16 12 17 $\frac{1}{10}$ 20 30 40 40-50 50 60 70 70-80 90 100 18 2 6 11 20 40 75 45 25 18 8 10 20 30 40 40-50 60 70 70-80 90 100 17 2 6 11 20 40 75 45 25 18 8 17 OR 18 Two dice are thrown. Let A be the event that the sum of the point on the faces is 9. L1 12 Let B be the event that at least one number is 6. Find (i) $P(A \cap B)$	2M 2M 2M
B. Tech II Year I Semester Regular Examinations May-2022 NUMERICAL METHODS, PROBABILITY & STATISTICS (Mechanical Engineering)Time: 3 hoursMax. Marks: 6 (Answer all Five Units 5 x 12 = 60 Marks) UNIT-1UNIT-11Find real root of the equation $3x = e^x$ by Bisection method.L112OR2Find the root of the equation $x e^x = 2$ using Regula-Falsi method.L112OR2Find the root of the equation $x e^x = 2$ using Regula-Falsi method.L112OR3Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2L512for the D.E y ¹¹ + xy = 0; y(0) = 1, y ¹ (0) = 1/2.ORL312UNIT-II5Compute Karl Pearson and Bowley's coefficient of Skewness to the following data:L612 \overline{X} $0 - 10 - 20 - 30 - 40 - 50 - 50 - 60 - 70 - 80 - 90 - 100 - 10 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 80R6Two dice are thrown. Let A be the event that the sum of the point on the faces is 9.L112Let B be the event that at least one number is 6. Find (i) P(A \circ B)$	2M 2M 2M
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UNIT-I1Find real root of the equation $3x = e^x$ by Bisection method.L1120R0RL1122Find the root of the equation $x e^x = 2$ using Regula-Falsi method.L1123Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2L5123Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2L5124Using R-K method of 4 th order, solve $\frac{dy}{dx} = x^2 - y$, $y(0)=1$. Find $y(0.1)$ and $y(0.2)$.L3125Compute Karl Pearson and Bowley's coefficient of Skewness to the following data:L612 \overline{X} $0 - 10 - 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100 - 100 - 20 - 30 - 40 - 75 - 45 - 25 - 18 - 8 - 100$	2M 2M
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Find the foot of the equation $x e^{-2}$ using Regular-Parst method. UNIT-II 3 Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2 L5 12 for the D.E $y^{11} + xy = 0$; $y(0) = 1$, $y^1(0) = 1/2$. OR 4 Using R-K method of 4 th order, solve $\frac{dy}{dx} = x^2 - y$, $y(0)=1$. Find $y(0.1)$ and $y(0.2)$. L3 12 UNIT-III 5 Compute Karl Pearson and Bowley's coefficient of Skewness to the following data: L6 12 $\overline{X} 0^{-1} 10^{-2} 20^{-3} 30^{-4} 40^{-5} 60^{-7} 70^{-80} 90^{-1} 100^{-7} 100^{$	2M
3 Evaluate by Taylor's series method, find an approximate value of y at x=0.1 and 0.2 L5 12 for the D.E $y^{11} + xy = 0$; $y(0) = 1, y^1(0) = 1/2$. 4 Using R-K method of 4 th order, solve $\frac{dy}{dx} = x^2 - y$, $y(0)=1$. Find $y(0.1)$ and $y(0.2)$. L3 12 UNIT-III 5 Compute Karl Pearson and Bowley's coefficient of Skewness to the following data: L6 12 $\overline{X \ 0^- \ 10^- \ 20^- \ 30^- \ 40^- 50 \ 50^- \ 60^- \ 70^- 80 \ 90 \ 100}$ F 2 6 11 20 40 75 45 25 18 8 OR 6 Two dice are thrown. Let A be the event that the sum of the point on the faces is 9. L1 12 Let B be the event that at least one number is 6. Find (i) P(A \cap B)	
4 Using R-K method of 4 th order, solve $\frac{dy}{dx} = x^2 - y$, $y(0)=1$. Find $y(0.1)$ and $y(0.2)$. L3 12 UNIT-III 5 Compute Karl Pearson and Bowley's coefficient of Skewness to the following data: L6 12 $\boxed{X \ 0^{-} \ 10^{-} \ 20^{-} \ 30^{-} \ 40^{-}50 \ 60^{-} \ 70^{-}80 \ 90^{-} \ 100^{-} \ 50^{-} \ 60^{-} \ 70^{-}80 \ 90^{-} \ 100^{-} \ 50^{-} \ 60^{-} \ 70^{-}80 \ 90^{-} \ 100^{-} \ 50^{-} \ 60^{-} \ 70^{-}80 \ 90^{-} \ 100^{-} \ 50^{-} \ 60^{-} \ 70^{-}80 \ 90^{-} \ 100^{-} \ 50^{-} \ 60^{-} \ 70^{-}80 \ 90^{-} \ 100^{-} \ 100^{-} \ 100^{-} \ 100^{-} \ 10^{-} \ 20^{-} \ 30^{-} \ 40^{-} \ 50^{-} \ 60^{-} \ 70^{-} \ 80^{-} \ 90^{-} \ 100$	2M
UNIT-III5Compute Karl Pearson and Bowley's coefficient of Skewness to the following data:L612 X 0-10-20-30-40-5050-60-70-90-100F2611204075452518890-OR6Two dice are thrown. Let A be the event that the sum of the point on the faces is 9.L112Let B be the event that at least one number is 6. Find (i) P(A \cap B)B1212	2111
5 Compute Karl Pearson and Bowley's coefficient of Skewness to the following data: L6 12	
X 0- 10- 20- 30- 40-50 50- 60- 70-80 80- 90- 10 20 30 40 40-50 60 70 70-80 90 100 F 2 6 11 20 40 75 45 25 18 8 OR 6 Two dice are thrown. Let A be the event that the sum of the point on the faces is 9. L1 12 L1 B be the event that at least one number is 6. Find (i) $P(A \cap B)$	2M
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 6 Two dice are thrown. Let A be the event that the sum of the point on the faces is 9. L1 12 Let B be the event that at least one number is 6. Find (i) P(A ∩ B) 	
Let B be the event that at least one number is 6. Find (i) $P(A \cap B)$	
	2M
(ii) $P(A \cup B)$ (iii) $P(A^c \cup B^c)$ (iv) $P(A^c \cap B^c)$ (v) $P(A \cap B^c)$.	
	M
$f(x) = \frac{1}{n}$ for $x = 1, 2,, n$.	
	M
the Probabilities that it will take on a value (i) Between 1 & 3 (ii) Greater than 0.5.	
OR	
	2M
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
Find i) k ii) $P(X \le 2)$ iii) $P(2 \le x \le 5)$.	

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9				with 5 cl (iii) eit						ect to have	L5	12M
	(1) 2 00)	e Brits	(111) 011			OR					
10	Find tw	o regr	ession	equatior	ns from	the follo	wing da	ta:			L1	12M
		X	10	25	34	42	37	35	36	45		
		Y	56	64	63	58	73	75	82	77		