Class Test -III (FEB. - 2023)

AMR2C1- Applied Mathematics –II

(ETC A, B)

Time: 70 min. Maximum Marks: 20

Note: Attempt all questions. Questions must be solved at one place. Each step should be well defined.

Q.1 States and prove Baye's Theorem. 5

Q.2 An anti-aircraft gun can take a maximum of four shots on enemy's plane moving from it. The probabilities of hitting the plane at first, second, third and fourth shots are 0.4, 0.3, 0.2 and 0.1 respectively. Find the probability that the gun hits the plane. 5

Q.3 Solve the equations by Cardan's Method $x^3 - 6x^2 + 6x - 5 = 0$ 5

Q.4 Let $X = \{x_1, x_2, x_3, x_4, \}$ and two fuzzy sets A and B are 5

$A = \{(x_1, 0.2), (x_2, 0.5), (x_3, 0.7), (x_4, 1)\}$

$B = \{(x_1, 0.6), (x_2, 1), (x_3, 0.4), (x_4, 0.3)\}$ then find $A \cup B$ and $A \cap B$. Is A is subset of B.

B.E. I year (E&I)
Class Test – III (December' 2023)
2AMRC1: Applied Mathematics-II

Note: Attempt only four questions.
Time: 70 min

Maximum Marks: 20

Q.1 States and prove Baye's Theorem. (5)

Q.2 (i) During war, 1 ship out of 9 was sunk on an average in making a certain voyage. What was the probability that exactly 3 out of a convoy of 6 ships would arrive safely? (5)
(ii) If on an average one ship in every ten is wrecked, find the probability that out of 5 ships expected to arrive, 4 at least will arrive safely.

Q.3 Solve the Equation $X^4 - 2X^3 - 21X^2 + 22X + 40 = 0$ whose roots are in arithmetic Progression (5)

Q.4 Solve by Cardan's Method $X^3 - 3X^2 + 12X + 16 = 0$ (5)

Q.5 Explain With Examples: a) Union of Fuzzy Set b) Truth Value of Fuzzy Set (5)

Proof it

$x^3(x^2-27)$
$x-1$
$x=1$