JEE Main 2024 April 6 Shift 2 Question Paper

1. Among the given molecules, identify the one which undergoes nucleophilic addition reaction at fastest rate 106%4

CH, CHO

CH,CH, CHO

CH,CH,CH,CHO

2. Which N base is not present in DNA?

3. Match the List-I with List-II:

List-I   List-II
(1) CC1)   (A) Antiseptic
(2) DDT   (B) Refrigerator
(3) CFC   (C) Insectiside
(4) CHI   (D) Fire extinguisher

4. Statement-I: 2,4,6-trinitrophenol is known as pricric acid.
Statement-II: Picric acid can be prepared by treating conc. HNO, with phenol-2,4-disulphonic acid.
Options:
A: Both Statement-I and Statement-II are false
B: Both Statement-I is false and Statement-II are true
C: Both Statement-I and Statement-II are true
D: Statement-I is true but Statement-II is false

5. 9.3 gram of aniline is treated with excess of NaNO + HC1, then with phenol what is the weight of the orange dye product?

6. Let A = (100, 101, 102, •••••, 700}.
Find number of numbers in set A which are neither divisible by 3 nor 4?

7. If (x) (X-1) +7= 25. Find the number of solutions for X.

8. R is defined on set X = (1, 2, , 20} and R, = {(x, Y) : 2x - 3y = 2}, R2 = {(x, y) : 5x - 4y = 0}. If M, N represent the number of elements to be added to make R, & R, symmetric respectively. Then find the value of M + N.

9. A company produces automobiles. It has two factories. Factory A produces 60% of the automobiles and rest is produced by the factory B. 80% of the automobiles produced by A is upto the standards and 90% of the automobiles produced by B is upto the standards. If an automobile is selected we found it as standard, the probability if it came from B is P. find 126P.

10. A bullet of mass 80g is fired with a speed 100m/s on a plywood and emerges with 40m/s the percentage of loss of kinetic energy is?