

**Mathematical concepts for MI and AL**

**Mid Term (Answer any one) Marks - 10**

**Case study 1**

The XYZ Pizza hut is known for its tasty and quality Pizzas. There is a great demand for its Pizzas by the customers. The following data relates to the distribution of Pizza delivery time (minutes) for 20 customers by a Pizza delivery boy.

22	23	25	26	28	29	30	33	40	47
41	34	33	32	30	29	28	25	24	21

Assume that the delivery time is normally distributed.

- (a) Find the population mean and population SD
- (b) What is the probability that for a randomly selected customer will receives the Pizza at least at 43 minutes.
- (c) What is the probability that for a randomly selected customer will receives the Pizza at most 37 minutes.
- (d) What is the probability that for a randomly selected customer will receives the Pizza between 43 and 48 minutes.

**Case study 2**

KIMS is a 1000 bedded general hospital with trauma care centre. The following data relates to the duration of hospitalization of patients depending on their disease condition.

2	3	1	19	5	7	21	8	45	10
24	6	90	9	17	49	1	5	52	60

As a data analyst you are requested by the hospital authority to help them in finding the summary statistics of the duration of hospitalization. Also, they wish to know which are the best measures to describes the above data?