Date

STATS ASSIGNMENT-1

(1) Find the mean of the following

(a)

RANGE	FREQUENCY
1-10	2
11-20	7
21-30	10
31-40	3
41-50	1

X	f	m	mf
0.5-10.5	2	5.5	11
10.5-20.5	7	15.5	108.5
20.5-30.5	10	25.5	255
30.5-40.5	3	35.5	106.5
40.5-50.5	1	45.5	45.5
	N=23		526.5

$$\bar{X} = \frac{\Sigma mf}{N} = 22.89$$

$$\boxed{\bar{X} = 22.89}$$

Q32

Sol: Given

$\bar{X}_1 = 113$

$\bar{X}_2 = 120$

$\bar{X}_3 = 115$

$N_1 = 50$

$N_2 = 60$

$N_3 = 90$

$\bar{X}_{123} = ?$

$$\bar{X}_{123} = \frac{\bar{X}_1 N_1 + \bar{X}_2 N_2 + \bar{X}_3 N_3}{N_1 + N_2 + N_3}$$

$$\bar{X}_{123} = \frac{50 \times 113 + 60 \times 120 + 90 \times 115}{50 + 60 + 90}$$

$$\bar{X}_{123} = \frac{23200}{200} = 116$$

$$\bar{X}_{123} = 116$$

Q.no(2)

Solution= Given

$\bar{X}_1 = 75$

$\bar{X}_2 = 60$

$N_1 = 1000$

$N_2 = 1500$

$\bar{X}_{12} = ?$

$$\bar{X}_{12} = \frac{\bar{X}_1 N_1 + \bar{X}_2 N_2}{N_1 + N_2}$$

$$\bar{X}_{12} = \frac{75 \times 1000 + 60 \times 1500}{1000 + 1500}$$

$$= \frac{75000 + 9000}{2500}$$

$$= \frac{165000}{2500} = 66$$

$$\boxed{\bar{X}_{12} = 66}$$

(c)

Exam Score	No. of students
51-60	4
61-70	8
71-80	15
81-90	8
91-100	5

x	f	m	mf
50.5-60.5	4	55.5	222
60.5-70.5	8	65.5	524
70.5-80.5	15	75.5	1132.5
80.5-90.5	8	85.5	684
90.5-100.5	5	95.5	477.5
	N=40		3040

$$\bar{x} = \frac{\Sigma mf}{N} = \frac{3040}{40} = 76$$

$$\boxed{\bar{x} = 76}$$

(b)

Range	Frequency
0-10	2
10-20	7
20-30	15
30-40	10
40-50	11
50-60	5

x	f	m	mf
0-10	2	5	10
10-20	7	15	105
20-30	15	25	375
30-40	10	35	350
40-50	11	45	495
50-60	5	55	275
	N=50		1610

$$\bar{x} = \frac{\Sigma mf}{N} = \frac{1610}{50} = 32.2$$

$$\boxed{\bar{x} = 32.2}$$