Q1

Range	Frequency
1-10	2
11-20	7
21-30	10
31-40	3
41-50	1

Ans 1a)

Continuous Range	Frequency(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
			826.5

$$\bar{x} = \frac{\Sigma mf}{N}$$

$$= \frac{826.5}{23}$$

$$= 35.93$$

Ans 1(b)

Range	frequency(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
			1610

$$\bar{x} = \frac{\Sigma mf}{N}$$

$$\bar{X} = \frac{1610}{50}$$

$$= 32.2.$$

(c)

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

Ans c)

Continuous Scores	(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
	40		3040

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

$$\bar{X} = \frac{3040}{40} = 76$$

Ans 2) $$X_{12} = \frac{\bar{X}_1 N_1 + \bar{X}_2 N_2}{N_1 + N_2}$$

$$= \frac{75 \times 1000 + 60 \times 1500}{1000 + 1500}$$

$$= \frac{75000 + 90000}{2500} = 66$$

Ans 3) $\text{Mean}_{ABC} = \dfrac{\bar{X}_1 N_1 + \bar{X}_2 N_2 + \bar{X}_3 N_3}{N_1 + N_2 + N_3}$

$= \dfrac{113 \times 50 + 120 \times 60 + 115 \times 90}{50 + 60 + 90}$

$= \dfrac{5650 + 7200 + 10350}{200}$

$= \dfrac{23200}{200}$

$= 116$