SHUBHAM GUPTA
180749

Q-1

	Feed	Underflow	Overflow
4	12	—	22
8	21	—	26
16	22	0	28
	55	0	76

2)

$$\left.\begin{aligned} x_F &= 0.55 \\ x_B &= 0 \\ x_D &= 0.76 \end{aligned}\right\}$$

$$E = \frac{(x_F - x_B)(x_D - x_F)\, x_D (1 - x_B)}{(x_D - x_B)^2 (1 - x_F)\, x_F}$$

$$E = \frac{0.55 \times 0.21 \times 0.76}{(0.76)^2 \times 0.45 \times 0.55}$$

$$E = 0.614$$

$$E\% = 61.4\%$$

now for crusher load.

$$\frac{D}{F} = \frac{x_F - x_B}{x_D - x_B}$$

$$F = \frac{D(x_D - x_B)}{(x_D - x_B)} = 2 \text{ tonne/hr} \times \frac{0.76}{0.55}$$

$$F = 2.76 \text{ tonne/hr}$$

classmate
Date
Page

		$x_i \times 100$			D_{pi}	$\frac{x_i \times 100}{D_{pi}}$
	[redacted]	[redacted]	3	6.68		
2.	-3+4	0	4	4.699	5.6895	0
	-4+6	4	6	3.327	4.013	0.9967
	-6+8	7.2	8	2.362	2.8445	2.531
	-8+10	12.0	10	1.651	2.0065	5.98
	-10+14	17.6	14	1.168	1.4095	12.49
	-14+20	15.4	20	0.833	1.0005	15.32
	-20+28	12.0	28	0.589	0.711	16.877
	-28+35	10.0	35	0.417	0.503	19.88
	-35+48	7.2	48	0.295	0.356	20.22
	-48+65	6.0	65	0.208	0.2515	23.857
	-65+100	3.8	100	0.1497	0.1775	21.41
	-100+150	2.8	150	0.104	0.1255	22.31
	-150+200	2.0	200	0.074	0.089	22.47
		100				

$$A_{SS} = \frac{6}{\phi_s \rho_p} \sum_{i=1}^{n} \frac{x_i}{D_{p_i}}$$

1 cm = 10 mm
0.1 cm² = 1 cm²

$\phi_s = 1$ $\quad \rho_p = 5\ g/cm^3$

$$\frac{6}{1 \times 5\ g/cm^3} \quad 1.084 \quad \frac{1}{mm = 0.1\ cm}$$

$$A_{SS} = \frac{6 \times 18.4}{5} = \boxed{22.08\ cm^2/g}$$

(Ans)