

Q:1

$$\text{LOC} = 20000$$

$$\text{Programmer} = 5$$

$$\text{develop} = 150 \text{ LOC/day}$$

LOC/day done by 5 progrs

$$\rightarrow 5 \times 150 = 750 \text{ LOC/day}$$

LOC \div LOC/day to find ~~in~~ how many days

$$20000/750 = 26.67 \text{ days} \approx 27$$

Q:2

$$\text{LOC} = 50000$$

$$\text{programmers} = 8$$

$$\text{develop} = 120 \text{ LOC/day}$$

$$\text{LOC/day of each 8 progra:}$$

$$8 \times 120 = 960 \text{ LOC/day}$$

$$\begin{aligned} \text{Duration of project} &= ? = \text{LOC/loc/day} \\ &= 50000 / 960 = 52.08 \approx 52 \text{ days} \end{aligned}$$

Q:3

$$\text{LOC} = 40000$$

$$\text{programmers} = 4$$

$$\text{LOC/day} = 80$$

$$\text{time} = 20 \text{ weeks}$$

⇒ total estimated effort
for project in person-
months = ?

$$\text{LOC/day of 4 progra} = 4 \times 80 = 320 \text{ LOC/day}$$

$$\text{days in 20 weeks} = 20 \times 7 = 140 \text{ days}$$

$$\begin{aligned} \text{Effort} &= \text{Duration} * \text{No. of programmer} \\ &= 140 * 4 = 560 \text{ person-days} \end{aligned}$$

Convert person-day to person-months

$$\therefore 22 \text{ working days / Month}$$

$$\therefore \Rightarrow 560 / 22 = 25.45 \text{ person-months}$$

Qe 4 $LOC = 75000$

programmer = 10

develop = 100 LOC/day

Months = 6

effort person-months = ?

$LOC/day \text{ of } 10 \text{ programmer} = 10 \times 100 = 1000 \text{ loc/d}$

~~days in 6 months = $6 \times 22 = 42$ days~~

~~Effort = 42~~

day in 6 months = 6×22 (working day)
= 132 days

Effort = $132 \times 10 = 1320$

Effort person-month = $1320 / 22$ (working day)
= 60 person-month

Qe 5 $LOC = 25000$

programmer = 6

develop = 125 LOC/day

Months = 3

min no. of programs = ? = total LOC / (LOC/day/p)

Duration = 3×22 (working day) = 66 days

min no. of prog = $25000 / 125 \times 66$

= 3.03 \approx 3 programmer

Q:6

$$EI = 10$$

$$EO = 8$$

$$EQ = 5$$

$$\text{Complexity} = \text{moderate} \Rightarrow 2 \Rightarrow \sum f_i = 14 * 2 = 28$$

$$UFP = 10 * 4 + 8 * 5 + 5 * 4$$

$$40 + 40 + 20 = 100$$

$$CAF = \frac{0.65 + (0.01 * 28)}{0.93} \Rightarrow 0.65 + 0.28$$

$$FP = UFP * CAF$$
$$100 * 0.93 = 93$$

Q:7 $EI = 3 \rightarrow \text{Complexity} = \text{high} = 6$

$EO = 4 \rightarrow \text{Complexity} = \text{Low} = 4$

$EQ = 2 \rightarrow \text{Average} = 4$

$$\sum f_i = 14 * 2 = 28$$

$$UFP = 3 * 6 + 4 * 4 + 2 * 2 = 42$$

$$CAF = \frac{0.65 + 0.01 * 28}{0.93} = 0.93$$

$$FP = 42 * 0.93 = 39.06$$

Q8

$$EI = 6 \Rightarrow \text{Low} = 3 \Rightarrow 6 \times 3 = 18$$

$$EO = 5 \Rightarrow \text{high} = 7 \Rightarrow 5 \times 7 = 35$$

$$EQ = 3 \Rightarrow \text{Low} = 3 \Rightarrow 3 \times 3 = 9$$

$$UFP = 62$$

$$CAF = 0.05 + 0.01 \times 28 = 0.93$$

$$FP = 62 \times 0.93$$

$$57.66 \approx 58$$

Q:9 $EI = 2 \Rightarrow \text{Low} = 3$

$$2 \times 3 = 6$$

$$EO = 3 \Rightarrow \text{Average} = 5$$

$$3 \times 5 = 15$$

$$EQ = 4 \Rightarrow \text{high} = 6$$

$$4 \times 6 = 24$$

$$UFP = 45$$

$$CAF = 0.93$$

$$FP = 45 \times 0.93 = 41.85 \approx 42$$

Q:10

$$EI = 8 \Rightarrow \text{high} = 6$$

$$8 \times 6 = 48$$

$$EO = 6 \Rightarrow \text{high} = 7$$

$$7 \times 6 = 42$$

$$EQ = 5 \Rightarrow \text{Ave} = 4$$

$$5 \times 4 = 20$$

$$UFP = 110$$

$$CAF = 0.93$$

$$FP = 110 \times 0.93$$

$$= 102.3 \approx 102$$