

Ct-04

Azizul Fslam Nayem

10.01.2021

011201262

Set-02

Section A.

Question-02

EDD: B-D-A-C-E-F

Job	Processing time (hr)	Due time (hr)	Flow time	Job lateness
B	379	391	379	0
D	369	505	748	243
A	378	867	1126	259
C	389	1145	1515	370
E	398	1378	1913	535
F	399	1588	2312	724

↓  
2312

↓  
7993

↓  
2131



$$\text{① Average completion time} = \frac{\text{Total flow time}}{\text{total number of jobs}}$$

$$= \frac{7993}{6}$$

$$= 1332.16.$$

$$\text{② Utilization} = \frac{\text{total processing time}}{\text{Total flow time}}$$

$$= \frac{2312}{7993}$$

$$= 28.93 \%$$

$$\text{③ Average number of jobs in system} = \frac{\text{total flow time}}{\text{Total processing time}}$$

$$= \frac{7993}{2312}$$

$$= 3.46.$$



$$\textcircled{4} \text{ average job lateness} = \frac{\text{Total lateness}}{\text{number of jobs}}$$

$$= \frac{2131}{6}$$

$$= 355.17$$

LPT: F-E-C-B-A-D

Jobs	Processing time (hr)	Due time (hr)	Flow time	Job lateness
F	399	1588	399	0
E	398	1378	797	0
C	389	1145	1186	41
B	379	391	1565	1174
A	378	867	1943	1076
D	369	505	2312	1807
	↓ 2312		↓ 8202	↓ 4098



$$\textcircled{1} \text{ Average completion time} = \frac{8202}{6} \\ = 1367.$$

$$\textcircled{2} \text{ utilization} = \frac{2312}{8202} \\ = 28.19\%$$

$$\textcircled{3} \text{ Average number of jobs in system} = \frac{8202}{2312} \\ = 3.55.$$

$$\textcircled{4} \text{ Average Job lateness} = \frac{4098}{6} \\ = 683.$$



We see that, In EDD Priority rules the average number of jobs in the system is less than In LPT Priority rules. So, the best sequence will be in EDD process. That is

(B-D-A-C-E-F)

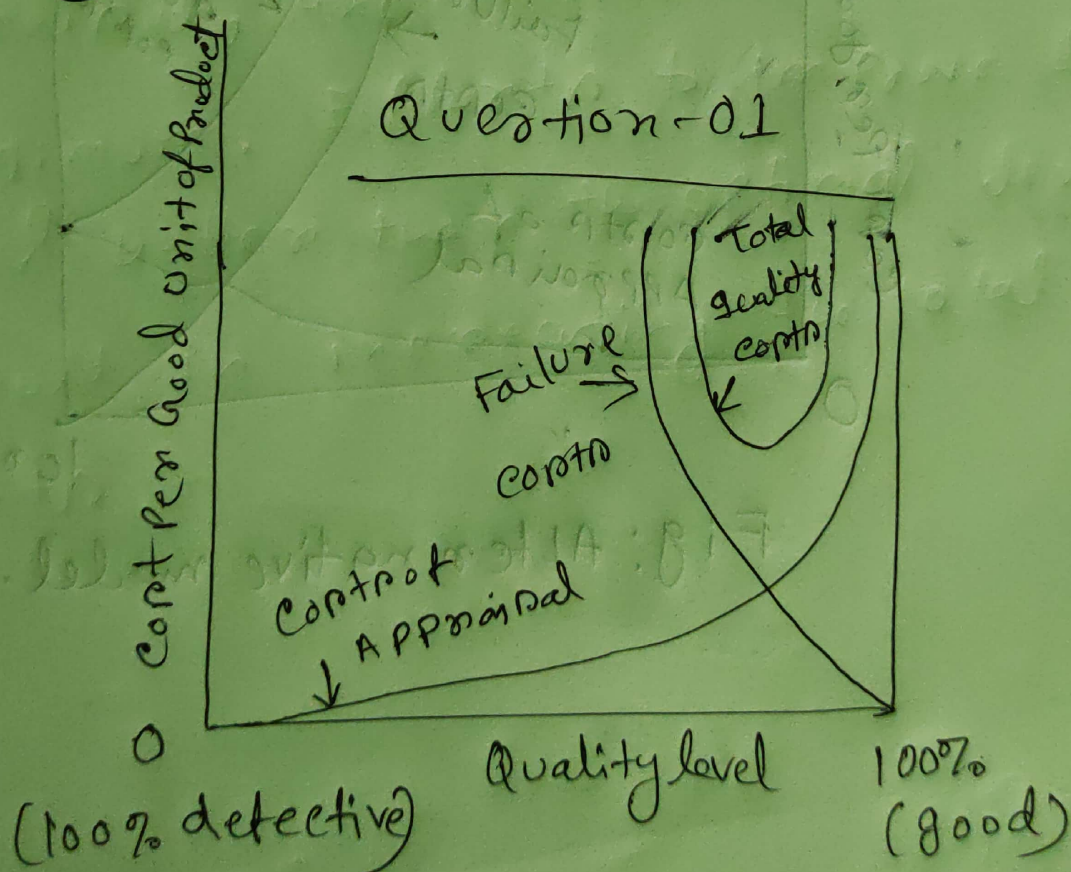


Fig: Durand's optimum quality cost model.



① In the figure, it can be seen that the cost of failure declines as conformance quality levels improve toward perfection, while the cost of appraisal plus prevention increases. There is some optimum target quality level where the sum of prevention, appraisal, and failure costs is at a minimum. Efforts to improve quality level better than the optimal level will result in increasing the total quality costs.



② Juran acknowledged that in many cases the classical model of optimum quality costs is flawed. It is common to find that quality levels can be economically improved to literal perfection. So, the new model of optimum quality cost incorporates the possibility of zero defects.

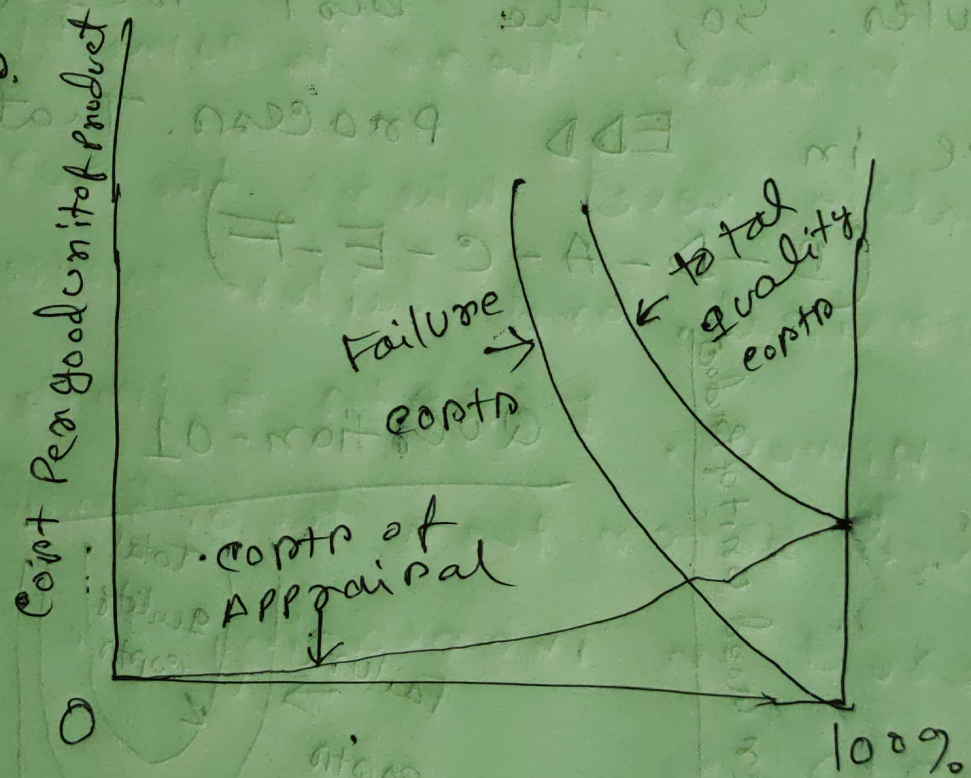


Fig: Alternative model.