(A) Non-Collusive Oligopoly Model: (Sweezy's Kinked Demand Curve Model):

If we assume one oligopolistic firm predict the reaction of rival firm then demand line can be drawn & one determinate solution can be obtained. This approach is followed by the "Kinked Demand Curve Model" developed by Paul M. Sweezy in his article "Demand under condition of Oligopoly" in the Journal of Political Economy, Vol.47(1939);pp-568-73.

This model based on the assumption of "Price Rigidity" i.e. no firm would like to indulge in price war by changing its price again & again. Price rigidity means price is fixed at a certain level even though demand & supply changed considerably.

Reason of Price Rigidity:

1. Firms want to maintain current level of revenue/sales therefore price may stable at a certain level.
2. As there is strong interdependence so no firm could like to invite retaliation by rivals by changing the price.
3. Firm does not want to disturb the price schedule with which the consumers are accustomed.

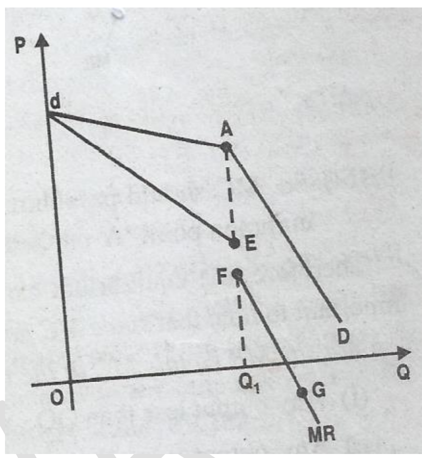
Assumptions of the Model:

1. The number of sellers is few it means a change in price, output or other variable by one firm will mean retaliation from its rival firm.
2. The products are "differentiated". So it is a case of Differentiated Oligopoly.
3. Products are qualitatively same it means the absence of advertisement cost.
4. "Price-cut" by one firm must be followed by competitors. It means if one firm lowers its price then his rivals will also lower the prices of their products. (In case of "Depressed market" condition). *(**opposite holds in case of "Buoyant market" condition)*
5. "Price-hike" by one firm will not followed by competitors. It means if one firm increase its price then his rivals will strict at ongoing price level. *(**opposite holds in case of "Buoyant market" condition)*

Derivation of Kinked Demand Line (AR): (Depressed Market)

1. When there is "Price Cut" then it is followed by rival firms. So, rate of fall in Price (P) > rate of increase in Quantity (Q). There is inelastic demand & demand line is downward & steeper which is denoted by the line AD.
2. When there is "Price Hike" then it is not followed by rival firms. So, rate of increase in Price (P) < rate of fall in Quantity (Q). There is elastic demand & demand line is downward & flatter which is denoted by the line dA.

So, dAD is Kinked Demand Curve or Oligopolistic Conjectural Demand Line.



Derivation of MR line: (Depressed Market):

From any given P=AR line the corresponding MR line can be drawn. We know the relationship MR=P (1-1/e). For different values of elasticity (e), the relationship between price line & MR line can be developed.

1. For flatter range of kinked demand line dA, we have corresponding MR, dE.
2. For steeper range of kinked demand line AD, we have corresponding MR, FG.
3. Point A is point in between elastic & inelastic part of demand line. As elasticity at this point is indeterminate so MR is also indeterminate at this point. So, MR line is discontinuous.

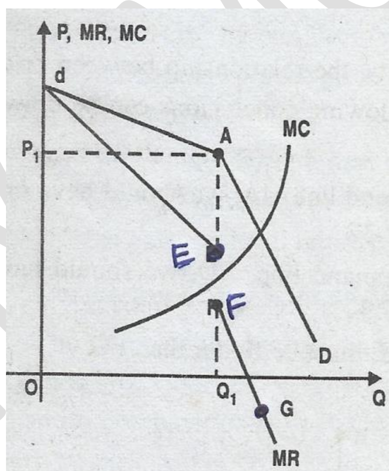
Derivation of Equilibrium in a Depressed Market:

In general, equilibrium conditions are (i) MR=MC (Necessary Condition)

(ii) MC cuts MR from below (Sufficient Condition)

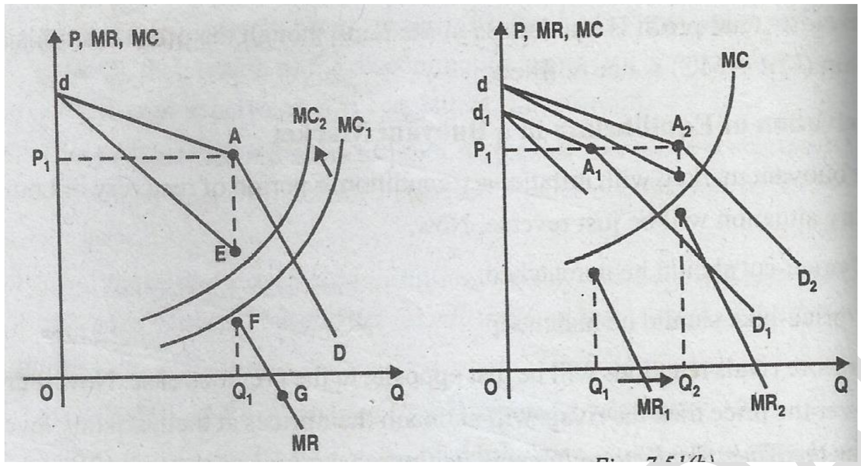
1. If MC passes through MR, dE then only elastic portion of demand line is considered (i.e. dA) & other part is ignored.
2. If MC passes through MR, FG then only inelastic portion of demand line is considered (i.e. AD) & other part is ignored.
3. So MC should pass through the discontinuous range EF. It means common point A on entire kinked demand line dAD is considered.

At point A as elasticity (e) is indeterminate so MR=P (1-1/e) is also indeterminate. As MR is indeterminate so MR=MC cannot be achieved at equilibrium level. Therefore equilibrium can be defined by point kink. So, at equilibrium MR=MC is not fulfilled.



Significance of Discontinuous Range of MR:

1. If per unit tax is imposed then total variable cost (TVC) will increase. Since MC depends on total variable cost therefore MC curve will shift in upward direction.
2. Increase (or decrease) in demand may lead to rightward (or leftward) shifting of kinked demand line.


P, MR, MC
d
P$_1$
A
E
F
G
MC$_2$
MC$_1$
D
O
Q$_1$
Q
MR
P, MR, MC
MC
d
d$_1$
P$_1$
A$_1$
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Q$_1$
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Q
MR$_1$
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