c) [IM) & [IN) are tangents drawn to (C) of center E at M & N respectively (proved)
then, [EI) is the bisector of $N\hat{E}M$ (Tangent theorem: St. line joining center of circle & pt of intersection of tangents is bisector of central angles intercepting arc formed by pts of tangencies.

1/2

then, $N\hat{E}P = M\hat{E}P$.
hence, $\overset{\frown}{NP} = \overset{\frown}{MP}$ (arcs intercepting equal arcs)
Thus, P is midpt of $\overset{\frown}{MN}$.

1/4

5a) (It) is perp. bisector of [NM] (Tangent theorem: st. line joining center of circle and pt of intersection of tangents).

J is diametrically opp. of P (given)
then, J is a pt on (It)

1/2

So, J is equidistant from pts M & N
So, JN = JM.

a) Now, I, N, E & M belong to same circle (proved).
So, $N\hat{I}M + N\hat{E}M = 180°$ (sum of opp. angles in an inscribed quadrilateral)

1/2

but, $N\hat{I}M = 60°$ (given)
then, $N\hat{E}M = 120°$
So, $N\hat{J}M = \frac{1}{2} N\hat{E}M$ (central & inscribed angles intercepting same arc $\overset{\frown}{MN}$ in (C))

1/4 Thus, $N\hat{J}M = 60°$