ASSIGNMENT II : solutions

Q1. (d.) first increases and then saturates.

Q2. (b) Bandwidth.

Q3. (c) phase difference of 180°.

Q4. (b) vary with a factor of 'τ'

Q5. (d), End-fire, End-fire

Q6. (b), 5 dBi

Q7. Given $f = 960$ MHz $\Rightarrow \lambda = 31.25$ cm

7.1(c) driven length $\simeq 0.45 - 0.49\lambda = 14.1 - 15.3$ cm

7.2 (c) reflector length $\simeq 0.5 - 0.55\lambda = 15.6 - 17.2$ cm

7.3 (b) director length $\simeq 0.4 - 0.45\lambda = 12.5 - 14.1$ cm

7.4 (b) spacing b/w ref. and driven $\simeq 0.2 - 0.25\lambda$
$= 6.25 - 7.8$ cm

7.5 (b) spacing b/w director & driven $= 0.3 - 0.4\lambda$
$= 9.4 - 12.5$ cm

Q(8-10) Given $f_l = 800$ MHz $\Rightarrow \lambda_l = 375$ mm $\Rightarrow \frac{\lambda_l}{2} = 187.5$ mm
$f_u = 2700$ MHz $\Rightarrow \lambda_u = 111.11 \Rightarrow \frac{\lambda_u}{2} \simeq 55.5$ mm

8. (c) maximum length $= \frac{\lambda_l}{2} = 187.5$ mm

9. (c) min. length $= \frac{\lambda_u}{2} = 55.5$ mm

10. (b) calculate smallest n, which satisfy
$(\lambda_l/2) \times \tau^{(n-1)} < (\lambda_u/2) \Rightarrow \boxed{n = 9}$