1. The measured HPBWs of an antenna in the two orthogonal planes are 30° and 20°. The approximate gain of the antenna in dB is: (2)
   a. 17.3dB
   b. 18.4dB (Ans)
   c. 23.1dB
   d. 31.5dB

2. The E-field pattern of an antenna varies as 3 + 2cosθ, where, angle θ is measured from broadside. The approx. HPBW of the antenna is: (2)
   a. 151°
   b. 149° (Ans)
   c. 31°
   d. 25°

3. For an omnidirectional antenna, first null beam width (FNBW) in E-plane is 45°, the approximate directivity in dB is: (2)
   a. 15.2dB
   b. 13.0dB
   c. 7.6dB (Ans)
   d. 6.5dB

4. The axial ratio of an antenna is 1.2. It is acceptable for which polarization: (1)
   a. Linear
   b. Circular (Ans)
   c. Elliptical
   d. Depends on the direction of wave propagation

5. If reflection coefficient of an antenna is 0.5 at a frequency of 900 MHz, then
   5.1 The value of voltage standing wave ratio (VSWR) is: (1)
   a. 5
   b. 3 (Ans)
   c. 2
   d. 1
   5.2 The percentage power transmitted by antenna is: (1)
   a. 75% (Ans)
   b. 50%
   c. 25%
   d. 10%

6. If the antenna input impedance is (30+j40)Ω at 2.45GHz, the percentage reflected power from the antenna is: (2)
   a. 0
   b. 25% (Ans)
   c. 75%
   d. None of these

7. A GSM1800 cell tower antenna with 16dB gain is transmitting 10W of power at 1845 MHz. The power density at a distance of 50m in the direction of maximum radiation is: (2)
   a. 4.0 mWatt/m²
   b. 6.4 mWatt/m²
   c. 12.7 mWatt/m² (Ans)
   d. 14.2 mWatt/m²
8. Two identical transmitting and receiving antennas are located at a distance of 2 km. Power transmitted is 30 dBm at 15 GHz and received power is -70 dBm, the approximate gain of each antenna is:
   a. 11 dB (Ans)
   b. 21 dB
   c. 41 dB
   d. 51 dB

9. Transmitting and receiving antennas operating at 1 GHz with gains of 20 dB and 15 dB, respectively, are separated by a distance of 1 km. Assume that the transmitting antenna is circularly polarized and the receiving antenna is linearly polarized. If the transmitted power is 150 W, the received power is:
   a. -5.6 dBm
   b. -7.2 dBm
   c. -8.6 dBm (Ans)
   d. -10.2 dBm

10. The diameter of a parabolic dish antenna for 40 dB gain at 11 GHz is……(Assume that efficiency η of the antenna is 65%).
   a. 2.0 m
   b. 1.5 m
   c. 1.1 m (Ans)
   d. 0.9 m