Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE)/(ETE) (2011 Onwards)/
(Electronics Engg.) (2012 Onwards)
(Sem.–4)

ELECTROMAGNETICS AND ANTENNAS

Subject Code : BTEC-403
Paper ID : [A1191]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Q1 Answer briefly:

a) What is meant by lowest usable high frequency?

b) What is dominant mode?

c) Define reflector antenna.

d) Outline the principle of working of a scanning array.

e) Outline the properties of a uniform plane wave.

f) What is the dominant mode in a circular waveguide?

g) Can TEM wave Exist in a hollow rectangular waveguide? Give reasons for your answer.

h) What are the applications of smith chart?

i) Write Maxwell's Equation in differential form.

j) Write the equation for circular and linear polarization.

SECTION-B

2. Derive free space equation.

3. Discuss structure of ionosphere.

4. Describe the concept of mode excitation in rectangular guides.

5. Derive Transmission line equation.

6. Derive the equation for the reflection coefficient of the uniform plane waves when it incident normally to the interface between two dielectrics.

SECTION-C

7. Derive all the four Maxwell's equation from basic law's in point form and integral forms.

8. Describe the following with respect to the propagation of radio waves :

   a) Virtual Height

   b) Skip distance

9. Obtain the excitation coefficients of a nine element binomial array.