

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2017-18 Examination

Semester: 1**Subject Code: 11204103****Subject Name: Electrodynamics-I & Programming in 'C'****Date: 22-12-2017****Time: 02:00PM to 04:30PM****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type (Each of 04 marks) (08)**
- (a) Prove that the retarded potential satisfies the inhomogeneous wave equation.
 - (b) Derive expression for E and B for the radiation from arbitrary distribution of charge and current.
- Q.1. B) Answer the following questions (Any two) (04)**
- (a) Short note (04)
 1. Derive equation of power radiated by oscillating magnetic field.
 2. Derive expression for scalar potential of oscillating electric dipole.
 - (b) Derive expression of vector potential for an oscillating magnetic dipole. (04)
 - (c) Explain radiation resistance in detail. (04)
- Q.2. A) Answer the following questions. (04)**
- (a) Brief note (04)
 1. Explain the term oscillating electric dipole.
 2. Discuss about the field of a point charge in a motion.
 - (b) Explain Lienard generalized equation of Lorentz formula. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
- (a) Short note (Each of 01 marks) (03)
 1. What is the field reaction?
 2. What is radiation zone?
 3. Give relation between vector u and vector v.
 - (b) Explain Poynting vector in detail. (03)
 - (c) Derive formula of the power radiation by a point charge. (03)
- Q.3. A) Essay type/ Brief note (Each of 04 marks) (08)**
- (a) Write a program of if-else with output.
 - (b) Write a program to display a prime number with output.
- Q.3. B) Answer the following questions (Any two) (04)**
- (a) Short note (Each of 02 marks) (04)
 1. Write expression and program on conditional operator
 2. Explain switch statement.
 - (b) Write a program to display even-odd number with output. (04)
 - (c) Write a program on multi-dimension array. (04)
- Q.4. A) Answer the following questions. (04)**
- (a) Short note (Each of 02 marks) (04)
 1. Write expression while ,do-while ,for -loop.
 2. Explain increment and decrement.
 - (b) Write a program on global and local variable. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
- (a) Short note (Each of 01 marks) (03)
 1. String constants are terminated by _____
 2. How many values of a function can be return at a time?
 3. What is the use of address operator.
 - (b) Write a program on switch statement. (03)
 - (c) Write a program to display 1 to 100 number. (03)