

BIKRAMJEET GOSWAMI MEMORIAL COLLEGE

B.SC. SEMESTER- II GE COURSE INTERNAL EXAM, 2020

COURSE CODE – 203

COURSE TYPE- GE-2 (BPHSGEHC)

SUBJECT- PHYSICS

FULL MARKS- 20

- a) Answer the following questions: 2X5=10
1. What do you mean by the flux of an electric field. Mention its unit.
 2. Define mutual inductance. What is non-inductive coil?
 3. Prove that $\vec{\nabla} \cdot (\vec{\nabla} \times \vec{F}) = 0$.
 4. Write down Maxwell's four equations of electromagnetic waves.
 5. State Lenz's law of electromagnetic induction.
- b) Find the value of $\vec{\nabla} \left(\frac{1}{r} \right)$, where \vec{r} is the position vector. What is irrotational vector? Write down the physical significance of gradient of scalar field. 2+1+2=5
- c) Find the potential at any point due to an electric dipole placed in a free space. Obtain the expression for the potential energy of an electric dipole placed in an external electric field. 2+3=5

Guidelines to the students:

- Mention Name, University Roll & Number, Registration Number, Subject & Name of the paper on the top of the Answer copy.
- The Answer Copy should be submitted to the e-mail id :
 - mrakshit007@gmail.com
- Last date of submission of the Assignment : 28th August, 2020

Monojit Rakshit

Department of Physics, B.G.M. College, Joypur , Purulia

Date : 22/08/2020