VIVEKANANDA COLLEGE, ALIPURDUAR

B.sc 1st Semester-2021

PHYSICS   DSC(P)   F.M: 20

Internal assessment

Answer the following questions (Each question carries 5 marks)

1. Find the gravitational potential and intensity at a point due to a solid sphere.

2. Write down differential equation of simple harmonic motion. Also discuss the solution of it.

3. Briefly discuss about Doppler Effect on the basis of relativity.

4. Given $\vec{F} = \hat{\imath}\,(z^2 + 2xy) + \hat{\jmath}\,(x^2) + \hat{k}\,(2xz)$

   Prove that $\vec{F}$ is conservative and also find the potential on force at (x,y,z) point

VIVEKANANDA COLLEGE, ALIPURDUAR

B.sc 3rd Semester-2021

PHYSICS   DSC 3A   F.M: 20

Internal assessment

Answer the following questions (Each question carries 5 marks)

1. Prove that, $C_P - C_V = R$
2. Prove that, $E = \frac{1}{2} kT$
3. Deduce Wien's Distribution law and Rayleigh-Jeans law from Plank's law of radiation.
4. Prove that, $S = k \ln w$