

Notice

Dept. Of Physics
Sukanta Mahavidyalaya
Dhupguri, Jalpaiguri

Dated:30.11.2020

All students of 2nd and 4th semester of the Department of Physics are being notified that the Internal assignment of the Honours and Program course will be held on 03.12.2020 as per following assignment(Questions).They are also asked to submit their written assignment mentioning their name, roll number and registration number on the front page on 03.12.2020 before 2:30pm at the email Id: physics.smv@gmail.com

SUKANTA MAHAVIDYALAYA

DHUPGURI, JALPAIGURI

DEPARTMENT OF PHYSICS

INTERNAL ASSIGNMENT

(SEM-II)

CC-4 WAVES AND OPTICS

Full Marks :10

Answer the following questions:

1. Define Lissajous figures. What are the uses of it?
2. Write down the laws of transverse vibration of string.
3. Define interference and diffraction of light. Write down the conditions for sustainable interference.
4. Show that the resultant of two collinear simple harmonic motion of equal frequencies is a simple harmonic motion of the same frequency.

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DEPARTMENT OF PHYSICS
INTERNAL ASSIGNMENT
(SEM-II)
DSE-2 ELECTRICITY AND MAGNETISM

Full Marks :10

Answer the following questions :

1. State Gauss's theorem in electrostatics. Using it calculate the electric field due to a uniformly charged straight wire.
2. State the Biot-Savart law for the magnetic field due to a current element and use it to obtain the magnetic field due a finite thin straight wire carrying current I .
3. State Faraday's law of induction and express it in differential form.
4. write down the Maxwell equation of electromagnetism in free space.

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DEPARTMENT OF PHYSICS
INTERNAL ASSIGNMENT
(SEM-II)
GE-2 ELECTRICITY AND MAGNETISM
Full Marks :10

Answer the following questions :

1. State Gauss's theorem in electrostatics. Using it calculate the electric field due to a uniformly charged sphere.
2. State the Biot-Savart law for the magnetic field due to a current element and use it to obtain the magnetic field due an infinite thin straight wire carrying current I .
3. State the laws of electromagnetic induction.

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DEPARTMENT OF PHYSICS

INTERNAL ASSIGNMENT

(SEM-IV)

DSC-2 WAVES AND OPTICS

Full Marks :10

Answer the following questions:

1. Show that the resultant of two collinear simple harmonic motions of equal frequencies is a simple harmonic motion of the same frequency.
2. Deduce the differential wave equation for the transverse wave motion along a stretched string.
3. Define group velocity and phase velocity. Find out a relation between them.
4. Find an expression of energy density in case of stationary wave.

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INTERNAL ASSIGNMENT
(SEM-IV)
GE-2 ELECTRECITY AND MAGNETISM
Full Marks :10

Answer the following questions :

1. State Gauss's theorem in electrostatics. Using it calculate the electric field due to a uniformly charged straight wire.
2. State the Biot-Savart law for the magnetic field due to a current element and use it to obtain the magnetic field due an infinite thin straight wire carrying current I .
3. What do you understand by 'self' and 'mutual inductance'?

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DEPARTMENT OF PHYSICS

INTERNAL ASSIGNMENT

(SEM-IV)

CC-9 ELEMENTS OF MODERN PHYSICS

Full Marks :10

Answer the following questions:

- 1. Write down Planck's black-body radiation formula in terms of wave length. In what conditions it leads to Wien's and Rayleigh-Jeans radiation formula.**
- 2. What is photoelectric effect? How does one can explain the fact that the maximum kinetic energy of the ejected electron is independent of the intensity of the incident light?**
- 3. What is Compton effect? Obtain an expressions for Compton wave length shift. Estimate its order.**
- 4. Explain why Compton effect is experimentally not observed for visible light rays?**
- 5. State Heisenberg's uncertainty principle . Give its one application.**

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DEPARTMENT OF PHYSICS

INTERNAL ASSIGNMENT

(SEM-IV)

SEC-2 RENEWABLE ENERGY AND ENERGY HARVESTING

Full Marks :10

Question: Discuss geo thermal energy giving special emphasis on its sources and uses.