



DIRECTORATE OF DISTANCE EDUCATION

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Assignment for M.Sc. Physics (Final)

सभी प्रश्नों के उत्तर दें।

अंकभार: 30%

प्रत्येक प्रश्नों के उत्तर 800 शब्दों में दें।

Paper IX

1. Derive Bragg equation from Laue's equation.
2. Explain classical theory of Mossbauer effect and its application in brief.
3. Establish clausius Mossotti equation and explain its applications

Paper X

1. Discuss Rutherford scattering model and derive Rutherford scattering formula.
2. Discuss Meson theory of nuclear forces and mention the discovery of pion.
3. Explain parity non-conservation and two component theory of neutrino.

Paper XI

1. How can a solution of a polynomial equation be obtained with the help of Newton. Raphson method? Explain it with an example.
2. Discuss and explain the matrix inversion method for obtaining a solution of any polynomial.
3. Give a five point formula for solution of practical differential equations.

Paper XIII

1. What is an operational amplifier? Discuss it in explanation. Mention operational amplifiers characteristics and obtain common mode rejection ratio.
2. Draw a circuit of clocked RS flip flop and explain its operation. Why is the condition $S = R = 1$ avoided?
3. What is a decoder? Explain the operation of BCD to decimal decoders. What is the BCD System? How is a decimal number represented in BCD?

Paper XIV

1. Give the basic blocks of a pulsed radar set and explain its operation. Why are microwaves used in radar?
2. Give the theory of uniform linear array broadside and entire arrays.
3. Develop the theory of population inversion and describe the Helium-Neon laser with its construction.

***Assignment (दत्तकार्य) जमा करने की अंतिम तिथि 30.06.2022 ***