



# SCIENCE



## Tuition Center Cheyyar

State Board & CBSE

Cell: 8667442256, 7845776187

Mr. G. RAMESH M.Sc, B.Ed, D.T.Ed.,

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### 12<sup>th</sup> Physics

#### Unit – 4 model question paper-2022

Date: 11/09/2022

Total marks: 30

#### I. One mark questions:

1 x 5 = 5

1. The unit of magnetic flux is.....
2. The SI unit of mutual inductance is.....
3. The maximum value of the induced emf is.....
4. The dimensional formula of impedance .....
5. The unit of inductive reactance is .....

#### II. Answer any three questions

2 x 3 = 6

6. What is efficiency of an ideal transformer?
7. How will you define Q factor?
8. What is lenz's law?
9. State Fleming's Right hand rule?

#### III. Answer any three questions

3 x 3 = 9

10. What are the applications of eddy currents?
11. What are LC oscillations?
12. Mention the various energy losses in a transformer (any three)?
13. What are the step up and step down transformer?

#### VI. Answer any two questions

5 x 2 = 10

14. Explain the construction and working of a single phase Ac generator with necessary diagram

(Or)

Discuss the Ac circuit containing only an inductor.

15. Derive an expression for phase angle between the applied voltage and current in a series RLC circuit.

(Or)

Discuss the production induced emf by changing relative orientation of the coil with the magnetic field

All the Best

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#### I. One mark questions:

1 x 5 = 5

1. The ratio between the radius of the first three orbits of hydrogen atom is.....
2. The charge of the cathode rays particle is.....
3. The nucleus is approximately spherical in shape. Then the surface area of nucleus having mass number A varies-----
4. The total energy of electron the nth orbit is  $E_n = \dots\dots\dots$
5. The unit of radio activity is-----

#### II. Answer any three questions

1. Define curie.
2. Write the properties of cathode rays.
3. What is mass defect?
4. What is meant by activity or decay rate? Give its unit.

#### III. Answer any three questions

3 x 3 = 9

1. What is half-life of nucleus? Give the expression.
2. Discuss the gamma decay process with example
3. Explain the idea of carbon dating.
4. Discuss the process of nuclear fission and its properties.

#### VI. Answer any two questions

5 x 2 = 10

5. Explain the J.J. Thomson experiment to determine the specific charge of electron.  
(Or)  
Discuss the Millikan's oil drop experiment to determine the charge of an electron.
6. Derive the energy expression for hydrogen atom using Bohr atom model.  
(Or)  
Details in law of radioactive decay

All the Best

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Kindly send me your district question papers to our whatsapp number: 7358965593