QP CODE:103018 **Reg.No: ……..**

First Year B.Sc (MRT) Degree Examinations February 2017

General Physics and Electronics

Time: 3 Hours **Total Marks: 100**

- Answer all Questions.
- Draw Diagrams wherever necessary.

Essay **(2x20=40)**

1. Explain the detail production of ultrasound its properties and working using peizo electric effect and its uses.
2. Explain the construction and working of transformer. Mention the types of transformer and its losses in detail

Short notes: **(8x5=40)**

3. Explain self -induction briefly.
4. Differentiate between diffraction and interference.
5. Define half-life and mean life of radioisotope with an example with a diagram
6. What is meant by RMS value of AC current. Give an expression for RMS VALUE of AC.
7. What is meant by average value of AC. Derive the relation between RMS VALUE and peak value of an AC.
8. Establish the rectilinear propagation of light for fresnels assumption.
9. Give the statement of Rayleigh criterion.
10. Write a note about optical fiber? What is the principle behind optical fiber and write its application

Answer briefly: **(10x2=20)**

11. Define step up and step down transformer.
12. Define Kirchiff's law with equation
13. Mention the properties of ferromagnetic materials.
14. State and explain Gauss theorem.
15. What is diffraction of light.
16. Properties of laser.
17. What is LC oscillation.
18. Define impedence and mention its unit.
19. Define rectification.
20. Explain the phenomenon of mirage

****