

QP CODE:103018

Reg.No:

First Year B.Sc (MRT) Degree Supplementary Examinations–August 2016

General Physics and Electronics

Time: 3 Hours

Total Marks: 100

- Answer all Questions.
- Draw Diagrams wherever necessary.

Essay

(2x20=40)

1. Explain in detail of the He-Ne laser its production, properties and application.
2. Explain the production of ultrasonics using magnetostriction method and its demerits. Add a note on its application.

Short notes:

(8x5=40)

3. State the law of radioactive decay and prove $N = N_0 e^{-\lambda t}$.
4. Define the construction of npn and pnp transistor
5. Explain what is meant by diffraction of light .Describe the experiment to demonstrate diffraction at single slit.
6. Define polarisation. Obtain the expression for polarisation by reflection..
7. Define rectification. Describe working of half wave and half wave rectifier.
8. State Faradays law of electromagnetic induction and explain three methods of producing induced e,m.f
9. Construction and working of a moving coil galvanometer
10. Explain mutual induction briefly.

Answer briefly:

(10x2=20)

11. Define superposition principle.
12. Define curie and becqueral and its relation.
13. Properties of semiconductors.
14. What is Zener diode and how it is useful in regulating the power supply
15. State the condition that must be satisfied for the light sources to be coherent
16. Derive the expression when three resistances are connected in parallel.
17. Define radio- isotope. Give example.
18. Few properties of electromagnetic radiation
19. Express quality factor in terms of L, C, and R.
20. A transformer steps up 220V to 2200V. What is the transformation ratio.
