

QP CODE:103018

Reg.No:

First Year B.Sc (MRT) Degree Examinations - July 2015

General Physics and Electronics

Time: 3 Hours

Total Marks: 100

- Answer all Questions.
- Draw Diagrams wherever necessary.

Essay

(2x20=40)

1. Describe the construction and working of transformer. Discuss the self-induction and the mutual induction. Distinguish the various power losses in a transformer. How are they minimized
2. Enumerate the different modes of radioactive decay with examples

Short notes:

(8x5=40)

3. Define energy, its SI units, its dimensions formula and different forms of energy
4. Define radioactivity. Derive the decay formula
5. Explain hysteresis loop with figure
6. Explain standing wave guide with figure
7. What is Intrinsic and extrinsic semiconductor
8. Define electromagnetic radiation and list 3 characteristics and its applications
9. What is polarization. What is double refraction in crystals
10. Sketch with their symbols, the basic structure of N-channel FET and MOSFET

Answer briefly:

(10x2=20)

11. Define i) ohm ii) joule with formula
12. Draw a circuit diagram for growth of current in L-R circuit
13. Why is FET superior over conventional UJT
14. What are different types of optical fibre. Explain any one of them
15. State the merits of an Op-Amp
16. What is double refraction
17. Distinguish between the characteristics of ferromagnetic and paramagnetic materials. Give example of each
18. Define the step up and step down transformer
19. Give a truth table for two input of AND gate
20. Explain doppler effect
