

QP CODE:103018

Reg. No:

**First Year B.Sc (MRT) Degree Regular/Supplementary Examinations
March 2024
General Physics and Electronics**

Time: 3 Hours

Total Marks: 100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

Essays

(2x20=40)

1. Explain Raman scattering of light based on quantum theory and give explanation for relative intensities of Stokes and antistokes lines.
2. With a neat diagram explain the method of generation, detection and measurement of radiofrequency waves.

Short notes:

(8x5=40)

3. What is double refraction. Give one example.
4. Write any five properties of Lasers.
5. What are the differences between ordinary and extra ordinary rays.
6. With a neat diagram working of an astable multivibrator.
7. Explain the forward and reverse characteristics of a p-n junction diode.
8. Explain Dia, Para and ferromagnetism.
9. Acceptor and rejector circuits.
10. Derive an expression for apparent frequency in Doppler Effect.

Answer briefly:

(10x2=20)

11. What is Brewster's law.
12. Eddy currents.
13. Coherent sources.
14. The basic forces in nature.
15. Write the relation between power and energy.
16. Ripple factor and efficiency for a half wave rectifier.
17. Einstein's mass-energy relation.
18. Condition for darkness of interference fringes.
19. The symbol and truth table of NOT gate.
20. Turns ratio of transformer.
