

QP CODE:103018

Reg. No:

**First Year B.Sc (MRT) Degree Supplementary Examinations
March 2020**

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 transformer losses and how to minimize it and write its application
2. Explain production of ultrasound and application using Piezo electric method

Short notes:

(8x5=40)

3. What is multivibrator, explain monostable multivibrator.
4. Explain characteristics of Zener Diode and mention its applications.
5. Explain polarization by reflection and refraction.
6. State Faradays law of electromagnetic induction and explain three methods of producing induced emf.
7. Write any three uses of gamma rays and X-rays.
8. What is rectification. Write about full wave rectifier.
9. State the law of radioactive decay and prove $N=N_0 e^{-\lambda t}$
10. Distinguish between fluorescence and phosphorescence.

Answer briefly:

(10x2=20)

11. Distinguish between line spectrum and band spectrum
12. Distinguish between metal and nonmetal by their energy band gap
13. Mention the demerits of ultrasonic using magnetostriction.
14. What is constructive and destructive interference
15. Explain Doppler's effect.
16. Define magnetic intensity (H) and explain.
17. Derive the expression for equivalent resistance when two resistors are connected in series.
18. What is meant by interference of light. Give example.
19. Define single and three phase circuit diagram.
20. What is an ideal transformer. What is efficiency of an ideal transformer
