

QP CODE:103018

Reg. No:

**First Year B.Sc (MRT) Degree Regular/Supplementary Examinations
March 2022
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 Fraunhofer diffraction due to single slit. Explain the basic difference between the diffraction spectrums of a single slit plane transmission grating.
2. Explain the working of half wave and full wave rectifiers with circuit diagrams.

Short notes:

(8x5=40)

3. Distinguish between Paramagnetic and diamagnetic materials.
4. Any three uses of gamma rays and X-rays.
5. Distinguish between inductive reactance and capacitive reactance.
6. Hysteresis. Explain with B-H diagram.
7. Optic fiber.
8. Explain the action of pn junction when its forward biased
9. Distinguish between voltmeter and ammeter.
10. Transformer losses.

Answer briefly:

(10x2=20)

11. Merits and demerits of EDDY current
12. Explain Einstein mass energy relation.
13. Mention the uses of polaroid.
14. Power factor of an AC circuit containing pure resistor and capacitor.
15. Define turns ratio of a transformer.
16. Coherent and incoherent source and give example.
17. What are the properties of Laser
18. Name four basic forces of nature
19. Distinguish between metal and nonmetal by their energy band gap
20. Mention the unit of mutual induction and name a device working on this principle
