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Reg. No.....

Name.....

M.Sc. (BIOMEDICAL INSTRUMENTATION) DEGREE EXAMINATION FEBRUARY 2024

First Semester

BMI 104—ELECTRONIC DEVICES AND CIRCUITS

(2023 Admissions – Regular / 2020–22 Admissions – Supplementary / 2019 Admissions – First Mercy Chance / 2018 Admissions – Second Mercy Chance / 2017 Admissions – Final Mercy Chance)

Time : Three Hours | Maximum Marks : 100

Part A

Answer any **five** *questions.*
Each question carries 10 *marks.*

1. What is ripple factor ? Explain how the ripple factor changes with filters.
2. Explain with figures the enhancement mode operation of MOSFET.
3. Explain the steps involved in design of a CE amplifier circuit.
4. Explain with figures the working of a push-pull power amplifier.
5. Explain with figures the operation of Hartley oscillator. Explain how Barkhaussen criterion is achieved here.
6. Draw and explain the working of an astable multivibrator using BJT.

(5 × 10 = 50)

Part B

Answer any **ten** *questions.*
Each question carries 5 *marks.*

1. Compare the VI characteristics of an ordinary diode and a zener diode.
2. Explain the principle of Varactor diode.
3. What are the characteristics and applications of UJT ?
4. Explain the concept of loadline analysis of BJT circuits.
5. Write a note on multistage amplifier.
6. What are the effects of negative feedback in amplifier circuits ?

Turn over

7. Draw and explain a Darlington circuit.

8. Compare class A and class B power amplifier.

9. Explain how heat sinks are selected for power amplifiers.

10. Explain the principle and applications of clapp oscillator.

11. Explain the applications of monostable and bistable multivibrator.

12. Draw and explain clamping circuits using diodes.

(10 × 5 = 50)