



RAN - 2003000204020091

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**S.Y.B.Sc. (Sem. - IV) Examination April - 2025**

**Electronics (Old) Paper - III**

**Amplifiers and Linears Integrated Circuits**

**सूचना : / Instructions**

(१)

नीचे दशावेल निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**S.Y.B.Sc. (Sem. - IV)**

Name of the Subject :

**Electronics (Old) Paper - III : Amplifiers and Linears  
Integrated Circuits**

Subject Code No.: **2003000204020091**

Seat No.:

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Student's Signature

- (2) Q.1 is compulsory.
- (3) Figures at extreme right indicate full marks.
- (4) Draw figures/diagrams to support your answer.
- (5) Assume data, if required.

**Q.1 Answer Briefly.**

**8**

- a. Explain positive feedback.
- b. Give Barkhausen's criterion for oscillation
- c. What are the limitations of Class A power amplifier?
- d. Explain Cross over Distortion.

**Q.2 a.** What is the effect of negative feedback on the performance quantities (Gain, input impedance, output impedance, bandwidth) of voltage series amplifier?

**8**

- b. A voltage series feedback amplifier has the following data:  
gain = 500,  $R_i = 1.5k\Omega$ ,  $R_o = 50\Omega$ ,  $\beta = 1/20$ . Calculate the amplifier gain, input and output resistance with feedback

**6**

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**[ 1 ]**

**[ P.T.O. ]**

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**OR**

- Q.2** a. Explain the working principle of Bistable multivibrator with neat diagram and waveform **8**  
b. Design an astable multivibrator of 2kHz having resistor of  $1k\Omega$  **6**

- Q.3** a. Discuss the limitations of class B push-pull amplifier and explain how the limitation is removed in Class AB push-pull amplifier. **8**  
b. For a class A power amplifier, zero signal collector current is 80mA and  $V_{cc} = 10V$ . Calculate maximum ac power, dc power and maximum power efficiency. **6**

**OR**

- Q.3** a. Explain circuit and working of Astable multivibrator. Show how the bistable multivibrator is triggered **8**  
b. Prove that the even harmonics are cancelled in push-pull amplifier **6**

- Q.4** **Write short note on any two.** **14**  
a. Advantages of negative feedback  
b. Wein bridge oscillator  
c. Monostable multivibrator  
d. Fundamentals about tuned amplifier