RAN-2003000204020091

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S.Y.B.Sc. (Sem. IV) Examination April - 2023

Electronics (Paper III)

Amplifiers and Linear Integrated Circuits

સૂચના : / Instructions

(૧) **નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.**
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 (Paper III)**
Amplifiers and Linear Integrated Circuits

Subject Code No.: **2003000204020091**

Seat No.:

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) Briefly explain feedback and the types of feedback.

b) Give Barkhausen's criterion for oscillation

c) Draw the circuit of Astable Multivibrator?

d) What is the limitation of Class B push pull amplifier.

Q.2 a) What is the effect of negative feedback on input and output impedance of voltage shunt amplifier? **8**

b) A voltage series feedback amplifier has the following data: gain = 500, Ri = 1.5kΩ, Ro = 50kΩ, β = 1/20. Calculate the amplifier gain, input and output resistance with feedback **6**

OR

a) Explain the working principle of Bistable Multivibrator with neat diagram **8**

b) To design an astable multivibrator of 1 khz having resistor of 10kΩ. **6**

Q.3 a) Show that the power efficiency of a resistive load Class A power amplifier is 25% only what steps are taken to improve the power efficiency of Class A power amplifier **8**

b) For a class A power amplifier, zero signal collector current is 80mA and Vcc = l0v. Calculate maximum ac power, dc power and maximum power efficiency. **6**

OR

a) Explain circuit and working of Astable multivibrator. **8**
Draw the waveforms of the Astable multivibrator

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 tunned amplifier