5. Define CMRR. Establish an expression for CMRR in a difference amplifier.

   CMRR keâ sheâj Yeeefkeâle keââeèpeÙeeW Skeâ Yeso efJeÙeêòekeâ ceWll CMRR keâ efueÙes JÙebpekeâ mLeeefhele keââeèpeÙees—

   Unit-III / FkeâeF&-III   7 ½

6. Discuss the principles of feedback. Describe the advantages of negative feedback in detail.

   heueYeekeâ Ce keâ efmeÉÉble keââer efJeJeÁevee keââeèpeÙees— $c+Ceeîcekeââ heueYeekeâ Ce keâ ueeYeeW keââer efJemlele JÙeeKÙee keââeèpeÙees—

7. Discuss the step response of an amplifier.

   Skeâ efJeÙeêòekeâ keââ heo DeveefÉeâÙee keâer efJeJeÁevee keââeèpeÙees—

   Unit-IV / FkeâeF&-IV   7 ½

8. Draw the circuit diagram of a voltage series feedback for CE amplifier and give the mathematical analysis of its various parameters.

   Skeâ CE efJeÙeêòekeâ ndlegjJeeeŠlee BeCeer heueYeeÙÙe Ce keâe efDeçe yeveeFùesleLee Gmekeâe efDeeYeVe efJeÙeueeeîkeââer iee mecee#ee keââeèpeÙees—

9. Draw the circuit diagram of a class A audio power amplifier and calculate its maximum collector efficiency.

   Skeâ Jeie& A efJekeââej keâ BeJÙe MeebEoâ efJeÙeêòekeâ keââe heeefjheLe efDeçe yeveeFùes Deejj Gmekeâe efveèÙees DeeâOekeââlece mekeeceerer o#elee keâer ieCevee keââeèpeÙees—

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B.Sc.(Part-I) Examination, 2015

ELECTRONICS

Paper - III

(Amplifiers)

Time Allowed : Three Hours]   *[Maximum Marks : 50*

Note : Answer five questions in all. Question No. 1 is compulsory. Attempt one question from each Unit.

keâyue heeBYe ÙeMveeîkeââ Gòej oeefpeÙeS~ ÙeMve meb 1 DeefveJeeÙe&n nw ÙelÙeskeâ FkeâeF&mes Skeâ ÙeMve keââeèpeÙeS~

1. Write short answers of the following:

            2x10 =20

   (i) Define thermal runaway.

   (ii) Explain briefly the load line.

   (iii) Write the advantages of using h-parameter model.

   (iv) Why is the negative feedback applied in high gain amplifiers ?

(v) What are the characteristics of a good difference amplifier ?

(vi) What are the woofer and tweeter? Draw the circuit diagrams of the following.

(vii) A Common source FET amplifier.

(viii) CC-CE configuration

(ix) CE- CB configuration

(x) A current shunt feedback amplifier.

(i) T<ceéJe heueÙeve keâes heefj Yeeefcele keââçheÙes-

(ii) Yeej jKee keâes mefüche ceVmecePeeFÙes-

(iii) h- ÖeeÛeue cee[ue keâes GheÙeeesie keââj ves keâ ueeYe efueeKeÙes-

(iv) GÛÛe ueeYe ÖeJe0keâ celW $e+Ceelcekeâ heîeeYeä[Ce keälleeWueieÙee peelee nw?

(v) Skeâ Gòece Yeso ÖeJe0keâ keâ keâìlee ue#eCe nefles n0?

(vi) Jeheâj Deewj šdäeešj keâìlee neîles n0?
efvecveefueeueKeâle keâ heefjheLe efŸe$e yeveeFÙes-

(vii) Skeâ GYeÙeÙe%o ceesle FET ÖeJe0keâ

(viii) CC-CE efJevÙeeme

(ix) CE-CB efJevÙeeme

(X) Skeâ Oeeje Me¥š heîeeYeä[Ce ÖeJe0keâ

Unit-I / Fkeâef-I   7½

2. Draw the circuit diagram of a common collector amplifier using hybrid parameters and derive the expressions for current gain, voltage gain, input resistance and output, resistance ?

neFefye([ÖeeÛeueeeWkeââes ÖeÙeeesie keââj les nÜÎ, Skeâ GYeÙeÙeä[ve‰ melkeemäne ÖeJe0keâ keââe heefjheLe efJe$e yeveeFÙes leLee Oeeje ueeYe, Jeesšlee ueeYe, efveJeeMe Öeefleje½e leLee efveiele Öeefleje½e keâ efueÙes JÙebpekeâ efveekeââleefueÙes-

3. discuss the cause for bias instability in a transistor. Describe the methods of transistor biasing in short Prove that self bias is the best biasing method.

Skeâ šÒbpemšj celWyeeÙeme DeefmLejlee keââ keââejCeeWkeââer JÙeeKÙee keââehefjÙeW šÒbpemšj yeeÙeemefme keââer efJeOeaÖeeWkeââes melüche ceW JeeÛeæ keââeÖefjÙeeskeââer mJe yeeeÙeeme meJeeÙeä[ece yeeeÙeämefme efJeefOe nw

Unit-II / Fkeâef-II   7½

4. Draw a circuit diagram of a common drain FET amplifier and find out the expressions for voltage gain, input and output resistances.

 Skeâ GYeÙeÙe%o [$e FET ÖeJe0keâ keââe heefjheLe efŸe$e yeveeFÙe leLee Jeesšlee ueeYe, efJeJeeMe leLee efveiele Öeefl   keââ JÙebpekeâ %eele keââehefjÙes-