

No Preview
Available

Total No. of Question : [4]

Registration No. :

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Programme Name : Bachelor of Electronics and Telecommunication Engineering

Regular S.Y.B.Tech.Sem.IV ESE May / June 2023

IV SEMESTER (2021 BATCH)

201ETL211-Electronics Circuits Analysis & Design - II

Duration : 2 Hours

Marks : 50

Instructions :

(Q1) All Questions are Compulsory

[20.0]

CO :- 1

Blooms Taxonomy :- Analyze

- (1.1) Draw hybrid pi model of CE configuration for high frequency response hence derive $f_{2(f)}$ for short circuited output. [6.0]

CO :- 1

Blooms Taxonomy :- Analyze

- (1.2) Derive expression for lower 3 dB frequency due to C_c . Calculate size of C_c to provide 3 dB point of 100Hz when $R_c = 1k\Omega$, $h_{fe} = 50$, $h_{ie} = 1k\Omega$, $R_s = 600\Omega$, $(R_1 // R_2) = 1k\Omega$. [7.0]

CO :- 2

Blooms Taxonomy :- Analyze

- (1.3) Design single stage RC coupled CE amplifier for given data $V_{cc} = 9V$, $S = 10$, $A_v = 90$, $f = 20Hz$ to $20kHz$, Transistor Data : $h_{fe} = 220$ $h_{ie} = 2.7k\Omega$ [7.0]

(Q2) All Questions are Compulsory

[10.0]

- (2.1) What are the different types of negative feedbacks? Explain current series feedback in detail with circuit diagram [4.0]

CO :- 3

Blooms Taxonomy :- Analyze

OR [2.1 / 2.2]

- (2.2) Draw and explain Darlington pair with circuit diagram and comment on current gain [4.0]

CO :- 3

Blooms Taxonomy :- Analyze

- (2.3) Derive the parameter equations such as R_i , R_o , A_v and A_i for voltage series negative feedback [6.0]

CO :- 3
Blooms Taxonomy :- Analyze

(Q3) All Questions are Compulsory [10.0]

(3.1) Explain in detail method of calculating harmonic distortion of power amplifier. [3.0]

CO :- 3
Blooms Taxonomy :- Analyze

(3.2) Explain class A single ended transformer coupled amplifier with circuit diagram and waveforms, hence derive its% efficiency? [7.0]

CO :- 3
Blooms Taxonomy :- Analyze

OR [3.2 / 3.3]

(3.3) Explain Classification of Power Amplifiers in detail. [7.0]

CO :- 3
Blooms Taxonomy :- Analyze

(Q4) Attempt any two out of three [10.0]

(4.1) Explain with diagram self-bias for JFET. [5.0]

CO :- 4
Blooms Taxonomy :- Analyze

(4.2) Explain the construction, working and characteristics of enhancement type MOSFET [5.0]

CO :- 4
Blooms Taxonomy :- Analyze

(4.3) Draw and explain common source MOSFET amplifier and derive an expressions for a) [5.0]
Voltage Gain(A_v) b) Output resistance(R_o)

CO :- 4
Blooms Taxonomy :- Analyze
