Hall Ticket Number:

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Code No. : 14345

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
Accredited by NAAC with A++ Grade
B.E. (E.E.E.) IV-Semester Main & Backlog Examinations, July-2022
Electronics Engineering-II

Time: **3 hours**

Max. Marks: **60**

*Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Define linear wave shaping?	2	1	4	1
2.	What is the difference between clipping and clamping?	2	1	5	1
3.	List out the advantages and disadvantages of multistage amplifiers?	2	2	1	1
4.	Define CMRR of a differential amplifier?	2	1	3	1
5.	List out the advantages of negative feedback in an amplifier?	2	2	1	1
6.	What is the effect of negative feedback on a bandwidth?	2	3	1	1
7.	State the conditions for sustained oscillations.	2	1	2	1
8.	A crystal oscillator has the highest frequency stability. Justify.	2	3	2	1
9.	Classify the amplifiers based on the operating point selection?	2	2	1	1
10.	How the efficiency of class A power amplifier is improved by the transformer coupled amplifier configuration?	2	3	1	1

Part-B (5×8 = 40 Marks)

11. a)	Derive the expression for output voltage when ramp signal applied to an RC high pass circuit?	4	3	4	1
b)	Design a diode clamper to restore the positive peaks of 1 KHz input signal to a voltage level equal to 5 V.	4	4	5	3
12. a)	Explain the operation of a direct couple amplifier.	4	2	1	1
b)	Three identical cascaded amplifier stages have overall upper 3 dB frequency of 100 KHz and overall lower 3 dB frequency of 20 Hz. Find the upper and lower 3 dB frequency of individual stages.	4	3	1	2
13. a)	Draw the block diagram of a voltage series feedback amplifier and derive the expressions for voltage gain and output impedance with feedback?	5	1	1	1
b)	An amplifier with open loop voltage gain of 1000 ± 50% is available. Determine the closed loop voltage gain and the feedback factor if the gain is altered by ±0.1% .	3	3	1	2

(90)

			M	L	CO	PO
14.	a)	Derive the expression for frequency of oscillation of a Colpitts oscillator?	5	4	2	1
	b)	An RC phase shift oscillator employing BJT with R = 200 KΩ and C = 200 pF. Determine the frequency of the oscillator.	3	3	2	2
15.	a)	Explain the operation of class A power amplifier with neat sketches?	4	1	1	1
	b)	A sinusoidal signal $V_s = 1.95 \sin 400t$ is applied to a power amplifier. The resulting current is $i = 12 \sin 400t + 1.2 \cos 800t + 0.9 \sin 1200t$. Determine the total harmonic distortion.	4	3	1	2
16.	a)	With neat diagram, explain the operation of single level clipping circuit with positive reference voltage.	4	2	5	1
	b)	Discuss the frequency response of RC coupled amplifier with neat sketches?	4	3	1	1
17.		Answer any *two* of the following:				
	a)	What is negative feedback? Discuss how it effects on input and output impedance of an amplifier.	4	2	1	1
	b)	Explain the frequency stability criteria for sinusoidal oscillators?	4	2	2	1
	c)	Explain the operation of Class – B Complementary symmetry Power amplifier.	4	2	1	1

M : Marks;   L: Bloom's Taxonomy Level;   CO; Course Outcome;   PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	23.6%
ii)	Blooms Taxonomy Level – 2	36.1%
iii)	Blooms Taxonomy Level – 3 & 4	40.3%

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