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G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.



UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2025.

(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., ELECTRONICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
III	PART - III	CORE - 5	U23EL303	ELECTRONIC CIRCUITS

Date & Session: 07.11.2025/AN

Time: 3 hours

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer <u>ALL</u> Questions.
CO1	K1	1.	For a half wave or full wave rectifier the Peak Inverse Voltage of the rectifier is always _____. a) Greater than the input voltage b) Smaller than the input voltage c) Equal to the input voltage d) Greater than the input voltage for full wave rectifier and smaller for the half wave rectifier
CO1	K2	2.	What is the purpose of a filter circuit in a rectifier circuit? a) To increase the output voltage b) To decrease the ripple voltage c) To convert DC to AC d) To rectify the input voltage
CO2	K1	3.	Infer the main function of a transistor amplifier. a) To store electrical energy b) To amplify the voltage, current, or power of a signal c) To rectify an AC signal into a DC signal d) To convert AC power to DC power
CO2	K2	4.	In a power amplifier, the output is typically _____. a) A small voltage with high current b) A large voltage with high current c) A small voltage with low current d) A large voltage with low current
CO3	K1	5.	Indicate which type of feedback amplifier has the highest input impedance? a) Voltage series feedback b) Voltage shunt feedback c) Current series feedback d) Current shunt feedback
CO3	K2	6.	What does a negative feedback amplifier do to the distortion in the output signal? a) Increases the distortion b) Has no effect on the distortion c) Decreases the distortion d) Can either increase or decrease the distortion
CO4	K1	7.	Which of the following is a condition for oscillation? a) $A\beta < 1$ b) $A\beta = 0$ c) $A\beta > 1$ d) $A\beta = 1$
CO4	K2	8.	In a Wien bridge oscillator, what type of feedback is used? a) Only positive feedback b) Only negative feedback c) Both positive and negative feedback d) Neither positive nor negative feedback
CO5	K1	9.	An Astable multivibrator is also known as a _____. a) flip-flop b) square wave generator c) Schmitt trigger d) one-shot timer

CO5	K2	10.	A circuit that shifts the entire waveform up or down without changing its shape is called a_____. a) Clamper c) Integrator b) Clipper d) Differentiator
Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	11a.	Describe the working of half wave rectifier with neat sketch. (OR)
CO1	K3	11b.	Illustrate the function of pi (π) filter with neat diagram.
CO2	K3	12a.	Show the operation of common emitter transistor amplifier. (OR)
CO2	K3	12b.	Discuss about class A power amplifier.
CO3	K4	13a.	Explain the basic concept of feedback amplifier. (OR)
CO3	K4	13b.	Articulate the function of voltage shunt feedback.
CO4	K4	14a.	Derive the condition for oscillation. (OR)
CO4	K4	14b.	Compare oscillator with an amplifier.
CO5	K5	15a.	Explain the operation of Schmitt trigger circuit. (OR)
CO5	K5	15b.	Describe the function of positive clipper with neat input & output wave form.

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	16a.	Derive the expression of ripple factor, RMS value and efficiency for full wave rectifier. (OR)
CO1	K3	16b.	Draw the block diagram of regulated power supply and explain each block.
CO2	K4	17a.	Analyze the operation of RC coupled multistage amplifier with neat circuit diagram. (OR)
CO2	K4	17b.	Illustrate the function of class A push pull amplifier with neat circuit diagram.
CO3	K4	18a.	Enumerate the effect of negative feedback in amplifiers. (OR)
CO3	K4	18b.	Discuss in detail about voltage series feedback and current shunt feedback.
CO4	K5	19a.	Show the oscillation frequency of Hartley oscillator and explain its operation with neat sketch. (OR)
CO4	K5	19b.	Demonstrate the oscillation frequency of Wien bridge oscillator and explain its operation with neat sketch.
CO5	K5	20a.	Explain the function of Astable multivibrator and list its applications. (OR)
CO5	K5	20b.	Describe the function of positive and negative clamper circuit with neat input & output wave form.